Australian Government

Department of Education, Employment and Workplace Relations

PMAOPS330B Communicate and monitor pipeline activities

Release: 1

PMAOPS330B Communicate and monitor pipeline activities

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	In this scenario operations technicians maintain a watching brief over the pipeline from the pipeline control centre. The centre will be the hub for pipeline activities in order to achieve minimum risk to continued safe and efficient operation of the pipeline system. The pipeline control centre operations technician will communicate with field personnel to obtain information and direct field operators to check and maintain pipeline operations.

Application of the Unit

Application of the unit	The operations technician will: • ensure the safety of the system and check operational equipment prior to start up • maintain productivity through the monitoring of flows, pressures and temperatures in the field • maintain communication with product suppliers and user customers to maintain the safe and efficient operation of the pipeline. Generally the pipeline control centre operations technician would be part of a team during pipeline startup and shutdown procedures. However, they will be expected to be capable of performing all parts of this unit on their own. At all times they would be liaising and cooperating with other members of the team and customers. AS 2885 Part 3 forms the principle reference standard for this competency.

Licensing/Regulatory Information

Not applicable.

© Commonwealth of Australia, 2012 Manufacturing Skills Australia

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

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.

© Commonwealth of Australia, 2012 Manufacturing Skills Australia

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Gather information about pipeline operation needs.	1.1. Respond to and record messages and information received from field operations and pipeline system stations 1.2. Interpret and acknowledge alarm codes correctly to ensure the correct response strategy is selected and applied to the situation 1.3. Clarify additional information needs and select an appropriate communication medium to deliver the information required 1.4. Improve operational efficiency through adequate and timely application of information provided 1.5. Interpret and action customer/shipper gas forecasts to ensure correct gas flow rates into the pipeline system are achieved.
2. Communicate pipeline information.	2.1. Monitor activities of pipeline personnel in the field and data from the control centre 2.2. Evaluate internal messages and response communications concerning system alarms/incidents to establish the scope and severity of the alarm/ incident 2.3. Convey pipeline system operation information to relevant personnel in other work areas to ensure safe and efficient operation of the pipeline system 2.4. Relay information to technicians and other services/parties so that fault finding or safety checks can be conducted to identify risks to product supply, pipeline equipment, environment and personnel 2.5. Authorise, record and monitor permits to work to allow operational activities to be undertaken or cancelled.
3. Coordinate pipeline systems operations.	3.1. Monitor field and pipeline station operations data 3.2. Monitor and observe equipment operating conditions, pressures and temperatures, and maintain correct equipment operating parameters 3.3. Identify faults and initiate the required repair or reporting of the fault 3.4. Isolate identified faults in the pipeline as appropriate 3.5. Respond to system alarms and emergencies 3.6. Determine the required course of action or emergency response to the identified system condition/ emergency 3.7. Complete and document pre-shutdown checks 3.8. Shut down the pipeline system under either normal or emergency conditions in accordance with operating

© Commonwealth of Australia, 2012 Manufacturing Skills Australia

ELEMENT	PERFORMANCE CRITERIA
	procedures 3.9. Confirm all identified maintenance is in compliance with the permit to work system and administer to ensure that all work complies with all issued permits.
4. Record and report.	4.1. Record and monitor field personnel movements to ensure the safety of all personnel in the field 4.2. Report safety and environmental risks or faulty equipment to designated personnel for further action or advice concerning the selection of the appropriate response or course of action 4.3. Interpret and maintain field inspection records and reports 4.4. Complete operations and production reports 4.5. Perform shift handover procedures.
5. Control hazards.	5.1. Identify hazards in work area 5.2. Assess the risks arising from those hazards 5.3. Implement measures to control those risks in line with procedures and duty of care.
6. Resolve problems.	6.1. Identify possible problems in equipment or process 6.2. Determine problems needing action 6.3. Determine possible fault causes 6.4. Rectify problem using appropriate solution within area of responsibility 6.5. Follow items initiated up until final resolution has occurred 6.6. Report problems outside area of responsibility to designated person.

© Commonwealth of Australia, 2012 Manufacturing Skills Australia

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 distinguish between causes of problems/alarm/fault indications such as: • pipeline pressure variations • instrument failure/wrong reading • electrical failure • mechanical failure • operational problems.
Required knowledge
The knowledge referred to in the Evidence Guide for this unit includes: • pipeline system functions within the design parameters and design philosophy • process information schemata of the pipeline system and associated facilities • pipeline operating principles, parameters and product specifications • relevant workplace documentation • SCADA systems • alarm systems and emergency systems, including fire and shutdown • the 'permit to work' system • architecture of the pipeline system • pipeline system operating parameters • gas quality/analysis equipment operation • MSDS information. • physics and chemistry relevant to the process unit and the materials processed • 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 process • 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.

© Commonwealth of Australia, 2012 Manufacturing Skills Australia

© Commonwealth of Australia, 2012 Manufacturing Skills Australia

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/ pipeline 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 use of the systems in the pipeline control centre 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 • 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

© Commonwealth of Australia, 2012 Manufacturing Skills Australia

EVIDENCE GUIDE	
	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: • *MSAPMPER202A Observe permit work* • *PMAOPS230B Monitor, operate and maintain pipeline stations and equipment.*
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.

© Commonwealth of Australia, 2012 Manufacturing Skills Australia

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 if 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 pipeline control system. For your organisation this may include (select relevant items): • radio communications equipment, email, fax and telephones • heaters, furnaces and exchangers • station instrumentation/metering equipment • condition monitoring equipment • process control equipment • gas quality and analysis equipment • valves, actuators and flanges • piping systems • pressure vessels/filtration equipment • compressors and prime movers • cathodic protection systems.
Typical problems	Typical problems for your plant may include: • communications disruptions • corrosion/hydrate formation • variations in flow temperature and/or pressure • failures of piping, valves or flanges • pipeline leakages.
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

© Commonwealth of Australia, 2012 Manufacturing Skills Australia

RANGE STATEMENT	
	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.
Occupational Health and Safety (**OHS**)	The identification and control of hazards and the application of OHS is to be in accordance with current, applicable legislation and regulations and company procedures. All work is carried out at all times in accordance with these requirements

Unit Sector(s)

Unit sector	Operational/technical

Competency field

Competency field	

Co-requisite units

Co-requisite units		

© Commonwealth of Australia, 2012 Manufacturing Skills Australia