



Australian Government

Department of Education, Employment and Workplace Relations

PMASUP344B Monitor and control repairs and modifications on operational pipe

Revision Number: 1

PMASUP344B Monitor and control repairs and modifications on operational pipe

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	<p>In a typical scenario an operations technician is responsible for ensuring that all modification and repair activities conducted on an operational pipeline system are carried out in accordance with approved procedures and specifications.</p> <p>In particular this refers to the individual monitoring and operating the pipeline system to enable the welding, cutting, repair/modification activities to be carried out, followed by the reinstatement of the pipeline system after the task has been completed.</p>
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Application of the Unit

Application of the unit	<p>Generally the operations technician would be part of a team. They would be expected to be capable of performing all facets of the competency whilst following site specific procedures. At all times they would be liaising and communicating with relevant team members.</p> <p>The operations technician would:</p> <ul style="list-style-type: none"> • ensure the nature of the intervention was clearly understood before work commenced • make certain the site was accessible and safe and that a work permit had been issued • monitor the conducting of appropriate tests on the modification/repair and verify the modification/repair was safe before recommissioning the pipeline system • recommission the pipeline system after the work and testing was completed. <p>AS 2885 Part 2 and Part 3 form the principle reference standard for this competency.</p>
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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 and plan for pipeline repair or modifications	1.1. Examine the work area and ensure there is adequate access to the affected section of the pipeline 1.2. Identify any on-site hazards or irregularities 1.3. Obtain plans, instructions, relevant codes and drawings of proposed works 1.4. Ensure pipeline repairers are aware of site hazards and confirm that a permit to work has been issued 1.5. Convey information concerning the identified repair/modification to all parties concerned with the repair 1.6. Inform third parties of the need for access to the site as necessary.
2. Monitor pipe welding, cutting and fabrication	2.1. Ensure the pipeline system is prepared in accordance with procedures and made safe for work to commence 2.2. Monitor the work to ensure that welding, stoppling or modifications are carried out according to the approved work plan 2.3. Verify that the necessary inspection and testing is conducted on the repaired or modification area 2.4. Confirm that test results are valid and that the work has been conducted to specification 2.5. Facilitate site clean up to remove waste materials and debris and restore the site to original condition 2.6. Sign off the permit to work at the completion of the work 2.7. Ensure that all environmental obligations are met.
3. Recommission pipeline	3.1. Contact the control centre and advise when repairs are completed successfully and arrange for the system to be brought back on line 3.2. Where the line has been manually isolated restore pipeline operation when authorised to do so 3.3. Inspect the area of the pipeline subject to the permit to work for any sign of leakage or defects 3.4. Confirm the pipeline is holding pressure and the system is meeting operational requirements.
4. Complete reports and documentation	4.1. Complete site reports and documentation as required by regulatory bodies or company procedures 4.2. Ensure site drawings are updated to show accurate location of repair or modification 4.3. Liaise with relevant company departments to ensure all records and drawings are updated to reflect the repair/modification.

ELEMENT	PERFORMANCE CRITERIA
5. Control hazards	5.1. Identify hazards in the pipeline system 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. Respond to problems	6.1. Identify possible problems in pipeline 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 through items initiated until final resolution has occurred 6.6. Report problems outside area of responsibility to designated person.

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 pipeline system and to distinguish between causes of problems/alarm/fault indications such as:

- leakages
- blockages
- instrument failure
- mechanical failure
- ice formation
- flow variations.

Required knowledge

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

- welding and cutting techniques on operational pipeline systems
- hot tap and stoppling techniques
- inspection techniques
- pipeline codes and standards
- pipeline drawings and plans
- the operation of pipe cutting equipment
- the operation of lifting and moving equipment
- fitting of pipeline repair clamps and sleeves
- safety systems and procedures
- quality assurance system requirements
- excavation of pipelines
- emergency response plans and procedures.

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 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 pipeline system 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

EVIDENCE GUIDE	
	<p>to full performance</p> <ul style="list-style-type: none"> obvious problems in related plant areas are recognised and an appropriate contribution made to their solution. <p>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.</p>
Context of and specific resources for assessment	<p>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.</p>
Method of assessment	<p>In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.</p>
Guidance information for assessment	<p>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.</p>

Range Statement

RANGE STATEMENT	
<p>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.</p>	
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	<p>This unit of competency includes all such items of equipment and unit operations which form part of the pipeline system. For your system this may include:</p> <ul style="list-style-type: none"> • non-destructive testing equipment, including radiographic, dye penetrant, ultrasonic and others • pipe cutting and repair equipment • air/gas movers • lifting equipment • plans and drawings • hand and power tools.
Typical problems	<p>Typical problems for your system may include:</p> <ul style="list-style-type: none"> • lifting equipment failures • fire and explosion • burns • atmospheric hazards • manual handling hazards • static electricity.
Appropriate action	<p>Appropriate action includes:</p> <ul style="list-style-type: none"> • 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	<p>Procedures may be written, verbal, computer-based or in some other form. They include:</p> <ul style="list-style-type: none"> • all work instructions • standard operating procedures

RANGE STATEMENT

	<ul style="list-style-type: none"> • formulas/recipes • batch sheets • temporary instructions • any similar instructions provided for the smooth running of the plant. <p>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.</p>
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	Support/generic
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Competency field

Competency field	
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Co-requisite units

Co-requisite units			
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