



Australian Government

Department of Education, Employment and Workplace Relations

PMASUP243B Monitor and maintain pipeline coatings

Revision Number: 1

PMASUP243B Monitor and maintain pipeline coatings

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	In a typical scenario, the operator will be carrying out inspection and testing activities on coated pipelines both in the plant and in the field to procedures and to the parameters established through the principle reference standard AS 2885 Part 3. They will also be involved in maintaining the pipeline coating which may have sustained damage for a variety of reasons. Activities will include assessing, through a range of testing and inspection techniques, the integrity of a pipeline's protective coating, and identifying areas requiring repair. Pipelines typically will require preparation to enable the work to be carried out, followed by inspection and testing activities to procedures to ensure the adequacy of the repair work.
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Application of the Unit

Application of the unit	Generally the operator would work on an individual basis and would be expected to be capable of performing all parts of this unit. They would be part of a team during pipeline startup and shutdown procedures. At all times they would be liaising and cooperating with other members of the team. The operator would: • identify and rectify operational problems • maintain a suitable database of information • utilise the information to develop appropriate intervention strategies
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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. Prepare pipelines for inspection/testing	2.1. Plan and prepare for inspection of pipeline coating to procedures 2.2. Identify pipeline location to determine workplace hazards 2.3. Consult appropriate personnel to ensure the work is coordinated effectively with others involved on the work site 2.4. Obtain tools and equipment needed to carry out the work to procedures and check for correct operation and safety.
3. Inspect and test pipeline coatings	3.1. Visually inspect pipeline coatings to determine condition and location of irregularities 3.2. Test pipeline as required to ensure system conforms to required operating parameters 3.3. Take appropriate action 3.4. Report and record information related to status and any irregularity/deviations to procedures.
4. Prepare pipeline surface and repair coating	4.1. Isolate work area to enable repair to proceed to procedures 4.2. Prepare the pipeline surface to receive the coating repair material using appropriate methods 4.3. Recoat the pipeline to procedures and test the repair area.
5. Notify completion of work.	5.1. Ensure worksite is clean and waste material is disposed of correctly to procedures and legislative requirements 5.2. Inform the control centre of the outcome of repairs and any abnormal situations 5.3. Return pipeline system to normal service to procedures if safe to do so 5.4. Notify work completion, incidents and irregularities to procedures.
6. Compile and analyse reports	6.1. Collect and compile repair and operational data into accepted reporting format 6.2. Take appropriate action 6.3. Ensure reports provide an accurate and ongoing record

ELEMENT	PERFORMANCE CRITERIA
	of deviations in the performance of the pipeline system 6.4.Utilise information or reports for short and long term control planning.

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

- variations in coating thickness
- instrument failure/wrong reading
- CP system characteristics
- incorrect interpretation of MSDS information
- operational problems.

Required knowledge

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

- all items on a schematic of the pipeline system and the function of each
- surface coating materials, their composition and application
- routine and non-routine repair techniques
- causes and remedies of common problems such as those selected in the range of variables
- various coating inspection and test requirements.

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 use of the pipeline 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

EVIDENCE GUIDE	
	analysed and the most likely cause determined • appropriate action is taken to ensure a timely return to full performance • obvious problems in related plant and field 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	As a general rule assessment will require access to an operating pipeline system over an extended period of time, or a suitable method of gathering evidence of operating competence 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.
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 inspection and testing system. For your plant this may include: • low voltage and high voltage holiday detectors • coating materials • coating thickness gauges and meters • densitometers • condensators • coating defect assessment survey equipment, eg DCVG method equipment, Pearson technique method equipment.
Typical problems	Typical problems for your situation may include: • coating failure • temperature, pressure and flow variations • damage from geophysical or other circumstances • communication failures.
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: • all work instructions • standard operating procedures • formulas/recipes • batch sheets

RANGE STATEMENT

	- 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	Support/generic
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Competency field

Competency Field	
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Co-requisite units

Co-requisite units		
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