



Australian Government

PMASUP344 Monitor and control repairs and modifications on operational pipe

Release: 1

PMASUP344 Monitor and control repairs and modifications on operational pipe

Modification History

Release 1. Supersedes and is equivalent to PMASUP344B Monitor and control repairs and modifications on operational pipe

Application

This unit of competency covers the skills and knowledge required to monitor and control repairs and modifications on operational pipe.

This unit of competency applies to operations technicians and those in similar roles who are required to ensure the work specifications are understood and correct preparations are made, confirm that work has been conducted to specifications, recommission the pipeline system after the work and testing is completed, and identify and respond to problems.

It does not cover actually doing the repair/modification.

This unit of competency applies to an individual working alone or as part of a team or group and working in liaison with other shift team members and the control room operator, as appropriate.

This unit of competency aligns to AS 2885 Pipelines - Gas and liquid petroleum (Parts 2 and 3).

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Support

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 and plan for pipeline | 1.1 | Examine the work area and ensure there is adequate access to the affected section of the pipeline |
|----------|--------------------------------------|------------|---|

	repair or modifications	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 and heritage 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
- 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

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.

- 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

- Hazards** Hazards include one or more of the following:

- electricity
- gas

- 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
- plant services (steam, condensate and cooling water)
- limited head spaces or overhangs
- working at heights, in restricted or confined spaces, or in environments subjected to heat, noise, dusts or vapours
- flammability and explosivity
- hazardous products and materials
- unauthorised personnel
- sharp edges, protrusions or obstructions
- slippery surfaces, spills or leaks
- extreme weather
- remoteness
- other hazards that might arise

Routine problems

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

- lifting equipment failures
- fire and explosion
- burns
- atmospheric hazards
- manual handling hazards
- static electricity

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

Pipeline system

This unit of competency includes all such items of equipment and unit operations which form part of the pipeline system, including as appropriate to the facility:

- non-destructive testing equipment, such as radiographic, dye penetrant and ultrasonic
- pipe cutting and repair equipment
- air/gas movers
- lifting equipment
- plans and drawings

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 PMASUP344 Monitor and control repairs and modifications on operational pipe

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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:

- ensure work, safety and permit requirements are conveyed clearly to relevant parties
- ensure preparations, work and testing are carried out according to requirements
- identify hazards and risks and apply risk control procedures
- communicate effectively with team/workgroup, supervisors and other personnel
- distinguish between causes of problems/alarm/fault indications, such as:
 - leakages
 - blockages
 - instrument failure
 - mechanical failure
 - ice formation
 - flow variations
- recognise early warning signs of equipment/processes needing attention or with potential problems
- complete forms and documentation.

Knowledge Evidence

Evidence must be provided that demonstrates knowledge of:

- 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
- excavation of pipelines
- regulatory framework
- organisation procedures, including those covering
 - safety, emergency and hazard control

- work permit systems
- maintenance
- quality assurance
- standard operating procedures (SOPs)
- hierarchy of control.

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 monitoring of at least two (2) pipeline repairs and/or modifications, the use of appropriate tools, equipment and safety gear requiring demonstration of preparation, operation, completion and responding to problems
 - may use industry-based simulation for part only 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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