Gas Industry Training Package
UTG98
V2.00

Volume Index

Volume 1 - Parts A, B & C

Volume 2 - Units NGS001 – NGS609

National Qualifications Framework

Certificates

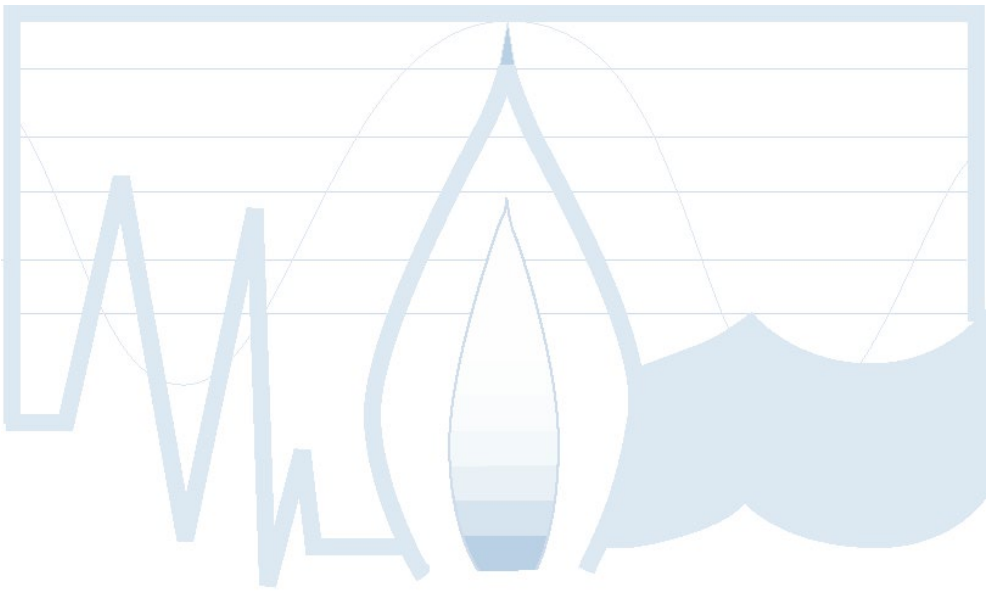
UTG 2 01 98	Certificate II-Gas Industry Operations
UTG 3 01 98	Certificate III-Gas Industry Operations
UTG 4 01 98	Certificate IV-Gas Industry Operations

Diploma

UTG 5 01 01	Diploma–Gas Industry Operations

Advanced Diploma

UTG 6 01 01	Advanced Diploma - Gas Systems



Gas Industry Training Package
UTG98
V2.00

Volume 2

Units NGS001 - NGS609

Level 11, AMP Place
10 Eagle Street
BRISBANE QLD 4000
Phone: (07) 3246 2300
Fax: (07) 3246 2490

This version prepared by:
Australian Training Products Ltd
Level 25 / 150 Lonsdale St, Melbourne , 3000
PO Box 12211 A'Beckett St Post Office
Melbourne, Victoria 8006, Australia
Telephone +61 3 9655 0600
Facsimile +61 3 9639 4684
E-mail: sales@atpl.net.au

First Published October, 1998

STOCKCODE: 9860002S

ISBN: 0 642 79617 3

Gas Industry Training Package-UTG98:V2.00

Printed for Australian Training Products Ltd by Mercury Printeam, Melbourne, Australia

AESharenet: P
Version 2.00

December, 2001

TABLE OF CONTENTS

Glossary 5
UTG NGS001 A 10
Apply Procedures in the Workplace 10
UTG NGS002 A 14
Work with Others 14
UTG NGS003 A 17
Plan and Organise Work Activities 17
UTG NGS101 A 20
Read and Record Meter Readings 20
UTG NGS102 B 24
Investigate Billing Exceptions/Conditions 24
UTG NGS201 A 28
Assess Operational Capability of Gas and Safety Equipment on Tankers 28
UTG NGS202 A 31
Load, Discharge LPG by Road Tanker 31
UTG NGS203 A 34
Load, Unload and Exchange Gas Cylinders 34
UTG NGS204 A 37
Fill Gas Cylinders 37
UTG NGS205 A 40
Refurbish Gas Cylinders 40
UTG NGS206 B 43
Monitor and Control Transfer of LPG 43
UTG NGS207 B 46
Process LPG 46
UTG NGS208 B 50
Perform Minor Maintenance on Gas Processing/Storage Facilities and Equipment 50
UTG NGS209 B 54
Co-ordinate Repair of Faults in Gas Processing/Storage Facilities and Equipment 54
UTG NGS210 B 57
Control Storage of LPG in Terminal 57
UTG NGS211 A 61
Control LPG Storage/Processing Operations 61
UTG NGS301 A 65
Construct and Lay Pipelines 65
UTG NGS302 A 68
Prepare, Excavate and Reinstate Site 68
UTG NGS303 B 71
Commission/Decommission Pipelines 71
UTG NGS304 A 75
Coat Pipelines 75
UTG NGS305 A 78
Maintain Pipeline Easement 78
UTG NGS306 B 81
Co-ordinate Pipeline Repair and Modifications 81
UTG NGS307 B 85
Launch and Recover (PIG) 85
UTG NGS308 B 88
Maintain Cathodic Protection Systems 88
UTG NGS309 B 92
Install Cathodic Protection Systems 92
UTG NGS310 B 96
Perform Routine Maintenance of Pipeline, Facilities and Equipment 96
UTG NGS311 A 100
Operate and Monitor Pipeline Control Systems 100
UTG NGS312 B 104
Co-ordinate Repair of Pipeline, Facilities and Equipment 104

UTG NGS313 B 108
Control Gas Odourisation 108
UTG NGS314 A 111
Control Pipeline Operations 111
UTG NGS315 B 115
Repair Gas Meters 115
UTG NGS316 B 118
Co-ordinate Construction, Laying and Testing of Gas Distribution Pipelines 118
UTG NGS317 B 123
Use Plans, Drawings and Specifications 123
UTG NGS318 A 126
Use and Maintain Small Plant, Equipment and Tools and carry-out Minor Mechanical Maintenance 126
UTG NGS 319 A 130
Supervise Technical Operations for Gas Distribution/ Transmission 130
UTG NGS 320 A 135
Supervise Technical Operations for Liquefied Petroleum Gas Storage and Processing 135
UTG NGS 321 A 140
Coordinate and Monitor Implementation of Risk Management Plan 140
UTG NGS 601A 145
Plan and implement the data acquisition and metering requirements of a gas system 145
UTG NGS 602A 149
Select and commission equipment to meet Pressure and Temperature control specifications 149
UTG NGS 603 A 152
Manage Workplace Risk 152
UTG NGS 604A 158
Manage gas system environmental compliance 158
UTG NGS 605A 162
Prepare design specifications for a gas system 162
UTG NGS 606A 166
Manage gas systems projects 166
UTG NGS 607A 170
Manage a customer service gas business unit 170
UTG NGS 608A 174
Manage financial resources 174
UTG NGS 609A 178
Manage physical resources 178

Glossary

Abnormalities	To confirm any abnormal condition of an item whether or not this could eventually result in a failure.
Allied industry	Allied industry means an industry that has comparable work functions and performance requirements relating to the respective Unit(s) of Competency and/or qualification. An allied industry may include: water, electricity, construction, metals and engineering, clerical, management (including front line) and the like.
Analyse	To examine and investigate data or information.
Appropriate personnel	Individuals with responsibilities for design, installation, maintenance, production or servicing activities. This can include: site managers; project managers; engineers and technicians; line managers/supervisors; team leaders; other personnel designated by an organisation or enterprise.
AQF	Australian Qualifications Framework which describes qualifications in terms of levels characterised by the outcomes of vocational education and training.
Assemble	To take raw stock and make detailed parts by a variety of methods, such as cutting, bending, attaching, etc. It may be applied to metal and composite structures, electrical parts etc.
Assessment	Refers to the process of collecting evidence and making judgements on the extent and nature of progress towards the performance requirements set out in a standard and at the appropriate point making the judgment whether competency has been achieved.
Bridging Program	*Bridging programs* are developed to provide access to any skill or knowledge gap an intended learner has relative to the entry requirement of the intended Unit(s) of Competency or Qualification. RTO's should ensure relevant technical knowledge and skills underpinning are determined and clearly defined for respective Unit(s) of Competency and/or Qualification.
Competency	Focuses on what is expected of a worker/employee in the workplace rather than on the learning process, and embodies the ability to transfer and apply skills, knowledge and attitude to new situations and environments.
Defect	Any confirmed abnormal condition of an item whether or not this could eventually result in a failure.
Easement	Environmental surroundings of the pipeline.

Environment	The area surrounding the work site which can The area surrounding the work site which can be directly or indirectly affected by occurrences at the work site. It includes the atmosphere, soils, drains, underground water tables and the ecosystem. Protection of the *environment* would require the proper disposal of waste materials, restriction of burning off, the correct handling of toxic substances, the containment of CFCs and the like. The protection of the environment would also include the minimisation of those factors that contribute, directly or indirectly, to the production of greenhouse gases. These contributing factors might include the minimisation of waste materials, the correct use of enterprise vehicles and machinery, the re-use or recycling of trade materials where possible and the overall reduction of energy usage through general awareness and the use of appropriate technologies.
Fault find	Identifying problems including functional faults.
Hazardous materials	Materials that could cause serious illness or injury.
Implement	To carry out or put in place a new requirement.
In accordance	A task or procedure is performed according to a plan, rules or guidelines.
Inspect	To examine or check a system, assembly, component or part by visual or physical means, for the purpose of identifying defects or limits.
Integrity testing	To ensure the system conforms to required operating parameters.
Legislative Requirements	Approved regulations and guidelines set down by either Federal or State Governments.
Maintenance schedules/servicing	That maintenance is performed at defined intervals to retain a system, component or part in a serviceable condition by systematic inspection, detection, replacement of worn-out items, adjustment, calibration or cleaning, etc.
Modification	Where a change or update is made.
OH&S	Arrangements of an organisation or enterprise to meet their legal and ethical obligations of ensuring the workplace is safe and without risk to health. This may include: hazardous and risk assessment mechanisms; implementation of safety regulations; safety training; safety systems incorporating work clearance procedures to carry out or put in place a new requirement.
Parameters	Set guidelines to be worked within.

Permit to Work	The Permit to Work is a authorisation for a individual to work in required activities and functions associated with the Gas Industry
Personal Protective Equipment	Used to assist in providing a safe work environment for workers.
PIG	Is the abbreviation for Pipeline Inspection Gauge.
Procedures	That to which equipment and procedures and their outcomes must conform. It includes legislative obligations and regulations and standards called-up by legislation or regulations. Requirements may also include: codes of practice; job specifications; standards called-up in specifications; procedures and work instructions; quality assurance systems; manufacturers' specifications; design specifications; customer/client requirements and specifications specified underpinning knowledge (specified in units' Evidence Guides)
Reduced or eliminated	Where something is either decreased or completely removed.
Regulatory guidelines	Where something is set as a compulsory part of a work environment.
Reports/documents	Information and printed matter related to specific items or topics.
Requirements	That to which *equipment* and procedures and their outcomes must conform and includes statutory obligations and regulations and *Standards* called-up by legislation or regulations. *Requirements* may include: • codes of practice • job specifications • Standards called-up in specifications • procedures and work instructions • quality assurance systems • manufacturers' specifications • design specifications • customer/client requirements and specifications • specified underpinning knowledge (specified in units' Evidence Guides) • National and State guidelines, policies and imperatives relating to the environment.

Safe working conditions	Measures undertaken to ensure workers are safeguarded against serious injury or illness.
Signage	Signs erected for display and to advise of a certain situation.
Simulated work environment	Circumstances that may arise in the work environment are constructed and used as a tool for assessing workers/employees operating under working conditions.
Standard Operating Procedures (SOPs)	Formal arrangements of an organisation, enterprise or statutory authority of how work is to be done. This may include, for example: quality assurance systems incorporating, for example: • requirements and procedures • work orders / instructions • reporting procedures • improvement mechanisms • safety management work clearance systems incorporating, for example: • work permits • monitoring and clearance procedures • isolation procedures • OH&S practices • procedures for operating safety systems, operating plant and equipment and reporting work activities • arrangements for dealing with emergency situations
Standards	Technical documents which set out specifications and other criteria for equipment, materials and methods to ensure they consistently perform as intended. The Standards referred to in this competency standard are those published by Standards Australia or in joint venture with Standards New Zealand and Australian Gas Association Standards. Competency in the use of other technical standards may be required in industries not restricted to Australian requirements. For example, shipping and off-shore petroleum industries are subject to standards agreed to by underwriters and enterprises or some other international convention.
Stream	Broad functional grouping of industry fields of activity. An aid to competency development only.

Test equipment	Tools that tests other pieces of equipment to ensure they are operating as intended.
Troubleshooting techniques	Methods used to locate or determine the reason for a fault in a system, component or part by means of a systematic checking or analysis.

UTG NGS001 A
Apply Procedures in the Workplace

Descriptor: Apply the relevant OH&S legislation, codes and practices with respect to OH&S in the workplace.

Element		Performance criteria	
001.1	Keep immediate work environment safe	001.1.1	All work areas are kept clean and free from obstacles.
		001.1.2	Any hazardous work situations are identified and reported.
		001.1.3	All emergency exits are known and kept clear at all times.
001.2	Employ safe working practices	001.2.1	Hazard warnings and safety signs are recognised and observed.
		001.2.2	Safety equipment is routinely checked in accordance with legislative requirements and SOPs.
		001.2.3	All hazardous materials and equipment are handled in accordance with materials safety data sheets and manufacturer's specifications.
		001.2.4	Appropriate personal protective equipment is used as required.
		001.2.5	Operating problems or equipment malfunctions are identified and reported.
		001.2.6	Equipment and work areas are regularly cleaned in accordance with SOPs.
		001.2.7	Safe manual handling techniques are used.
001.3	Safely dispose of hazardous materials	001.3.1	All potentially hazardous materials are securely and safely stored.
		001.3.2	Hazardous waste is collected, sorted and disposed of in accordance with SOPs and environmental legislation, regulations and codes.
001.4	Respond to accidents and emergencies effectively	001.4.1	Workplace fire drill, accident and emergency evacuation procedures are demonstrated or fully explained.
		001.4.2	Workplace emergency first aid procedures are followed.

Element		Performance criteria	
		001.4.3	All accidents or safety incidents are reported and recorded as required.
001.5	Refer to relevant regulations and procedures	001.5.1	Relevant sections of SOPs and legislative requirements are located and followed.
		001.5.2	Assistance is sought to clarify obligations and procedures.
		001.5.3	Work instructions which impact on safety and legal liability are clarified.

Range of Variables

Legislation includes relevant sections of Federal and State OH&S and Environmental Protection Acts.

Inspection of safety equipment is through visual and mechanical checks.

Safety equipment may include fire extinguishers and blankets; hoses; pumps; branches, fittings/nozzles; breathing apparatus; alarms; sprinkler systems; first aid kits.

Personal protective equipment may include protective head wear; face masks; gloves; safety boots; clothing such as overalls; hearing protection

Relevant regulations and procedures are referred to, but not limited to, for the use of machinery/equipment; cleaning materials and aids; equipment operation; personal protective equipment eg. safety boots, eye and ear protection, safety helmets etc.

Emergency and/or hazardous work situations may include fire; gas leak or vapour emission; utilities failure

Relevant sections of SOPs may include hazard policies and procedures; emergency, fire and accident procedures; procedures for the use of personal protective clothing and equipment; hazard identification and issue resolution procedures; job procedures and work instructions; relevant guidelines relating to the use of machinery and equipment

Evidence Guide

Critical aspects of evidence

Using appropriate safety equipment in the required manner; identifying hazardous materials and applying appropriate waste disposal procedures; adhering to SOPs including incident and accident recording and reporting; following first aid and emergency procedures

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment.

Specialised resources required for training and assessment

Availability of appropriate equipment including personal protective equipment; availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit is a core unit and should be assessed in conjunction with the appropriate core competencies.

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to adhere to operational safety requirements and site emergency procedures; interpret relevant safety codes; apply correct manual handling techniques; understand and adhere to SOPs and organisation policies; correctly handle the types of hazardous waste; understand relevant sections of Federal and State OH&S and Environmental Protection legislation including those for waste disposal; maintain a clean, safe and secure working environment; apply OH&S principles in the workplace

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	1
Collecting, analysing & organising information	1
Planning and organising activities	1
Working with others in a team	1
Using mathematical ideas and techniques	1
Solving problems	1
Using technology	1

UTG NGS002 A
Work with Others

Descriptor: Be an effective member of a team.

Element		Performance criteria	
002.1	Communicate with others within the work environment	002.1.1	Ideas, information and comments relevant to the work is shared with others of the team.
		002.1.2	Information provided to others is accurate, relevant and timely.
		002.1.3	Suggestions for improvement are put forward in a constructive manner.
		002.1.4	Information, opinions and ideas relevant to the work process are sought from others and feedback is encouraged.
		002.1.5	Agreed changes to improve work outcomes are undertaken.
002.2	Participate in the work processes	002.2.1	Work with others in accordance with the policies and standards covering workplace behaviour.
		002.2.2	Responsibilities and duties are allocated and undertaken in a positive and cooperative manner.
		002.2.3	Instructions are understood and implemented consistent with the specified requirements.
		002.2.4	Assistance is offered to others to ensure the team's work responsibilities and objectives are met.
002.3	Workplaces issues and conflicts are resolved	002.3.1	Issues and/or conflicts are promptly identified and discussed.
		002.3.2	Action to resolve identified issues and/or conflicts are undertaken demonstrating respect of individual differences.
		002.3.3	Resolution outcomes are mutually agreed.

Range of Variables

Work group/teams may consist of permanent, part-time, temporary casual employees; trainees; contractors, consultants; individuals on work experience

Work groups/teams many be formally or informally structured; established or ad-hoc work units; working parties; tasks forces; committees; self-directed teams

Actions to resolve issues, problems or conflicts may include problem solving; negotiation; conflict resolution; use of a mediator

Work with others requires differences between people to be taken into account, especially in relation to cultural, racial and ethnic backgrounds; physical requirements; gender; languages; customs, religious and traditional beliefs; different interpersonal communication styles.

Information may be in the form of a verbal or written progress reports.

Evidence Guide

Critical aspects of evidence

These include contributing towards developing and maintaining a productive team environment; actively participating in team activities; working within resource restraints e.g. time, personnel, workload; work practices are consistent with SOPs and organisation policies

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment.

Specialised resources required for training and assessment

Availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit is a core unit and should be assessed in conjunction with the appropriate core competencies.

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to work towards fostering a cohesive team environment; understand and adhere to SOPs and the organisation's policies; understand and adhere to organisation code of conduct and ethics policy; communicate effectively; negotiate effectively; assist with problem solving; manage time effectively; demonstrate an awareness cultural difference issues

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	1
Collecting, analysing & organising information	1
Planning and organising activities	2
Working with others in a team	2
Using mathematical ideas and techniques	1
Solving problems	2
Using technology	1

UTG NGS003 A
Plan and Organise Work Activities

Descriptor: Accept responsibility for the planning and organising of work activities to achieve specified outcomes.

Element		Performance criteria	
003.1	Identify and confirm task requirements	003.1.1	Task requirements are determined or confirmed and clarified to ensure correct interpretation of task requirements and specifications.
		003.1.2	Requirements and specifications are analysed and priorities set in accordance with SOPs.
		003.1.3	Resources are identified and obtained in order to complete task.
		003.1.4	Identified difficulties or problems are resolved.
		003.1.5	Requirements for site safety plan
003.2	Undertake relevant steps to complete task	003.2.1	Task is undertaken according to work plan and set priorities.
		003.2.2	Allocated work is completed within allocated timeframe and to the required standard and specifications.
003.3	Review task and seek performance feedback	003.3.1	Performance feedback is sought to confirm outcomes are in agreement with task requirements and specifications.
		003.3.2	All necessary documentation relevant to the task is completed.

Range of Variables

Responsibility for tasks and workload may include interpreting work instructions and direction; prioritising work; using time effectively; arranging work materials

Work plans may include formal and informal means of prioritising activities; daily plans; quality plans; safe working plans

Procedures may include SOPs; quality procedures; organisation continuous improvement strategy

Documentation related to tasks activity may include time sheets; requisitions; work sheet/job cards

Evidence Guide

Critical aspects of evidence

These include interpreting verbal instructions, plans and specifications; managing own time effectively; identifying task problems and difficulties; adhering to SOPs

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment.

Specialised resources required for training and assessment

Availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit is a core unit and should be assessed in conjunction with the appropriate core competencies.

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to understand and adhere to the organisation's structure, goals and objectives; understand and apply SOPs; follow administrative procedures; understand and apply quality systems; utilise communication systems; comply with organisation documentation and reporting procedures; interpret plans and specifications; communicate effectively; apply basic planning skills; set own priorities; complete relevant documentation

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	2
Collecting, analysing & organising information	2
Planning and organising activities	3
Working with others in a team	1
Using mathematical ideas and techniques	1
Solving problems	2
Using technology	1

UTG NGS101 A
Read and Record Meter Readings

Descriptor: Plan, sequence and record meter readings.

Element		Performance criteria	
101.1	Plan and record meter reading route/sequence	101.1.1	Routes are mapped to correspond to schedule requirements and to ensure individual routes are achievable within a given timeframe.
		101.1.2	Records relating to previous routes are consulted to identify problems or barriers to the route.
		101.1.3	Records are maintained in accordance with SOPs.
		101.1.4	Route sequences are evenly distributed throughout the region to ensure reading schedules are maintained.
		101.1.5	Resource requirements are accurately determined and availability checked before finalising meter reading sequence.
		101.1.6	Sequence is prepared in advance and made available for referral by appropriate personnel.
101.2	Locate property/meter	101.2.1	Property and meter are correctly identified according to information on the account.
		101.2.2	Meter is located by referring to meter location/directory details on a street directory or hand-held computer.
		101.2.3	Meter is located using all directory information.
		101.2.4	Site maps are used to locate meters in difficult locations.
101.3	Interpret and record meter reading	101.3.1	Meter is read in accordance with SOPs.
		101.3.2	Damage, faults or discrepancies to meters are recorded and reported to appropriate personnel.
		101.3.3	Meter readings are recorded accurately against corresponding meter data and in accordance with SOPs.

Element	Performance criteria	
	101.3.4	Unusually high or low readings are checked and investigated before finalising reading.
	101.3.5	New or changed information is added to store of information according to SOPs.

Range of Variables

Resource requirements to enable efficient planning and scheduling of routes may include availability of competent meter readers, vehicles and appropriate meter reading equipment.

Schedule requirements should include number of days; address and location; previous schedule date; route number; meter count

Aspects to consider when sequencing a route for an individual include distance; weather conditions; terrain; time available; urban/rural area; experience of meter reader

Information on the account may include identification number; meter number; property number; position of meter; street name

Records relating to previous routes may include meter access details; warnings relating to dogs; obstacles to access

Methods used to record meter reading may include meter reading cards; meter reading sheets; electronic reading devices such as Portable Data Entry Terminal (PDET)

Damage or faults to meters may include unreadable meters; incorrect meter locations; suspected tampering with the meter; suspected illegal connections

New or changed information may include special customer requirements; addition of new meters; deletion of meter when necessary; changes to meter numbers; changes to property information; change in location of meter

Evidence Guide

Critical aspects of evidence

Accurately locating meters; accurately reading and recording of meter readings; communicating with customers; developing constructive responses when confronted with problems and difficulties; accurately updating information on the database

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment.

Specialised resources required for training and assessment

Availability of appropriate equipment including street directories, hand held computers or meter reading cards; availability of suitably qualified industry

assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit should be assessed in conjunction with or after competency has been demonstrated in Unit NGS 001 Apply Procedures in the Workplace, Unit NGS 002 Working With Others and Unit NGS 003 Plan and Organise Work Activities and the following units of the Clerical and Administrative Competency Standards:

- BSA INF 202 A Process and Analyse Information to provide access to and security of records
- BSA COM 202 A Process and Respond to Written Information to Facilitate Communication Flow
- BSA TEC 202 A Operate a Computer to Gain Access To and Retrieve Data

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to plan and determine routes for meter reading sequence; understand and adhere to SOPs; liaise with relevant authorities and personnel; interpret maps and directories to locate meters; understand the types and function of various types of meters; operate a hand held electronic recording devices to record meter readings; accurately interpret and record meter readings; identify and document hazards

Demonstrate the ability to liaise effectively with a range of clients; clear and accurate observation and analytical skills; negotiation and dispute resolution skills; general business and organisational skills; appropriate report and letter writing; written and verbal communication; effective telephone techniques

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design).

Key Competency	Level
Communicating ideas & information	1
Collecting, analysing & organising information	3
Planning and organising activities	3
Working with others in a team	1
Using mathematical ideas and techniques	1
Solving problems	2
Using technology	1

UTG NGS102 B
Investigate Billing Exceptions/Conditions

Descriptor: Investigate exceptions to the billing process and implement their solutions.

Element		Performance criteria	
102.1	Prepare for investigation of exceptions and conditions	102.1.1	Account exceptions and conditions are correctly identified and comprehensively researched in a timely fashion and according to SOPs.
		102.1.2	Records are maintained in accordance with SOPs.
102.2	Investigate billing exceptions and conditions	102.2.1	Analysis of information to identify key issues is undertaken as required.
		102.2.2	Information is evaluated for relevance and validity to the requirements.
		102.2.3	Dealings with customers are consistent SOPs.
		102.2.4	Special needs of customers are identified and considered in targeting client service.
		102.2.5	Problems are identified and action taken or recommended to avoid or address them.
		102.2.6	Records are maintained in accordance with SOPs.
102.3	Develop and apply solutions	102.3.1	Solutions are developed based on consideration of relevant information and options.
		102.3.2	Proposed solutions are communicated and implemented as required.
		102.3.3	Solution is implemented in accordance with SOPs ensuring: - action is correctly documented - transaction is accurately processed - customer is advised.
		102.3.4	Records are maintained in accordance with SOPs.

Range of Variables

Exceptions and conditions may include long term bill accounts (12 months); meter changes; manual bills; daily accounts; active and inactive accounts; gas used on an inactive account ie vacant premises; meter reader is unable to find the meter; missing meters/records; unknown consumer investigations; vacant premises investigations; meter relocations

Problems may include consumption is abnormally high or low; reading is lower than previous reading (step down); access to meter; discrepancy between meter reader's reading and that of the consumer; missing meter; meter breakdown; meter relocation

Investigating billing exceptions and conditions may involve **Field calls may be undertaken to determine:** owner/occupiers' of properties; dates of entry of owner/occupier; meter reading for billing purposes; meter identification details; other relevant information such as forwarding address, payment arrangement

Telephone contact to consumers; councils/rates offices; real estate agents; internal employees/Departments; other statutory authorities

Liaison with customers: in person or by telephone; fax; letter; Internet

Solutions include arrange the removal of inactive meters; account billed; change meters; arrangements for payment made; adjust accounts; access for future meter reading made

Evidence Guide

Critical aspects of evidence

These include effective use of company billing system; identifying problems, considering alternatives and successfully implement solutions; communicating and negotiating with customers and employees; developing constructive responses when confronted with problems and difficulties

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment.

Specialised resources required for training and assessment

Access to company billing system; availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and Co-requisite:

This unit requires, as an entry, attainment of the Certificate II in Gas Operations and related units of competence if pursuing a Certificate III in Gas Operations.

Entry may also be accepted from those who have achieved an equivalent AQF level two-qualification competency outcome from an *allied industry*. As such, they would be expected to have attained sufficient relevant underpinning knowledge and skills, which could be used to accelerate their progress through this unit to the Certificate III in Gas Operations. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

Additionally, this unit should be assessed in conjunction with or after competency has been demonstrated in the selected Clerical and Administrative Competency Standards including:

- BSA INF 301 A Maintain Information Records System to ensure Integrity of System
- BSA COM 301 A Collect and Provide Information to Facilitate Communication Flow
- BSA ENT 301 A Provide Information and Advice Regarding the Products and Services of the Organisation to Meet Client needs
- BSA ENT 302 A Process Client Complaints to ensure the goals of the Organisations are Met
- BSA TEC 301 A Use the Advance Functions of a Range of Office Equipment to Produce a Document

Knowledge and Skills:

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to manage work to achieve goals and results; use available routine information appropriate to work responsibility; make decisions within responsibility and authority; monitor/introduce practices to improve performance; use effective consultative processes; communicate routine and non-routine information clearly to senior managers, peers and subordinates; select and use available technology appropriate including appropriate accounting systems; understand and adhere to SOPs; understand the types and function of various types of meters

Demonstrate: the ability to liaise effectively with a range of clients; clear and accurate observation and analytical skills; negotiation and dispute resolution skills; general business and organisational skills; appropriate report and letter writing; written and verbal communication; effective telephone techniques; identify problems, consider alternatives and successfully implement solutions

Key Competencies:

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	2
Collecting, analysing & organising information	3
Planning and organising activities	2
Working with others in a team	1
Using mathematical ideas and techniques	2
Solving problems	2
Using technology	2

UTG NGS201 A
Assess Operational Capability of Gas and Safety Equipment on Tankers

Descriptor: Assessment of the gas and safety equipment on a tanker.

Element		Performance criteria	
201.1	Inspect gas and safety equipment	201.1.1	Equipment is visually inspected prior to operation, in accordance with SOPs.
		201.1.2	All components of the tanker and associated equipment are checked to ensure that they are free from damage, leaks and obstructions which may limit operating capability.
		201.1.3	Safety systems, instruments and gauges are checked to ensure they are operational and faults and malfunctions are reported to appropriate personnel.
		201.1.4	Inspection procedures are carried out according to manufacturer's specifications and SOPs.
		201.1.5	Records are maintained in accordance with SOPs.
201.2	Identify and assess faults	201.2.1	Faults are identified and assessed as to their potential effect on the operation.
		201.2.2	Faults which may have an effect on operational outcomes or safety are reported to appropriate personnel.
		201.2.3	Records are maintained in accordance with SOPs.
201.3	Record and report results of inspection and testing	201.3.1	Results of inspection and testing are accurately recorded in accordance with SOPs.
		201.3.2	The results of the inspection and testing are accurately communicated to appropriate personnel according to SOPs.
		201.3.3	Clear reference is made to any items which may affect future operational outcomes or safety of the equipment.

Range of Variables

Types of equipment may include tanks, valves and fittings; seals and gaskets; pump and drive shaft; meters; emergency equipment; pipes; pneumatic/electronic control equipment; gauges; hoses and connections including hose protection systems; earthing straps; personal protective clothing; hydraulic equipment

Faults may include water leaks; oil leaks; damaged hoses; gas leaks; valves not operating; air leaks; electric control cable damage

SOPs will cover the following maintenance procedures; OH&S; legislative requirements; recording procedures; industry practice; inspection checklists

Appropriate personnel may include site managers; maintenance personnel; shift supervisors

Inspection and testing of the vehicle is detailed in the National Road Transport Standard TDTC 497 A and TDTC 597 A.

Types of tankers may include heavy rigid or heavy combination truck.

Evidence Guide

Critical aspects of evidence

These will include pre-start and visual inspection procedures; accurate diagnosis and documentation of faults; adhering to inspection procedures; adhering to defined safety and regulatory guidelines; operating vehicles as per National Road Transport Industry Competency Standards Drive Heavy Rigid Vehicles (TDTC 497 A) or Drive Heavy Combination Vehicles (TDTC 597 A).

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment. Assessment may be carried out by day or night, in varied weather conditions, but must adhere to defined safety and regulatory guidelines.

Specialised resources required for training and assessment

Availability of required equipment to assess operational capability of safety equipment; availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and Co-requisite

This unit should be assessed in conjunction with or after competency has been demonstrated in Unit UTG NGS 001 A Apply Procedures in the Workplace, Unit UTG NGS 002 A Working With Others, Unit UTG NGS 003 A Plan and Organise Work Activities, Unit UTG NGS 202 A Load, Discharge LPG by Road Tanker and the following units of the National Road Transport Industry Competency Standards:

- Drive Heavy Rigid Vehicles (TDTC 497 A) or
- Drive Heavy Combination Vehicles (TDTC 597 A).

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit. An employee working at this level is required to:

Demonstrate knowledge and understanding of the various types of safety equipment; demonstrate an awareness of the properties of LPG; demonstrate an understanding of the operational capacity of safety equipment and tanker; operate equipment within its limitations; adheres to OH&S and emergency procedures; understand and apply SOPs including the reporting/recording of incident procedures; demonstrate an awareness of the Australian Dangerous Goods Code; identify/diagnose faults; follow inspection procedures

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design).

Key Competency	Level
Communicating ideas & information	1
Collecting, analysing & organising information	1
Planning and organising activities	1
Working with others in a team	1
Using mathematical ideas and techniques	1
Solving problems	1
Using technology	1

UTG NGS202 A
Load, Discharge LPG by Road Tanker

Descriptor: Loading and discharging of LPG by road tanker.

Element		Performance criteria	
202.1	Prepare worksite for loading and discharge of tanker	202.1.1	Appropriate personnel are consulted to ensure the work is co-ordinated effectively with others involved on the work site.
		202.1.2	Materials necessary to complete the work are obtained in accordance with SOPs and checked against job requirements.
		202.1.3	Tools and equipment needed to carry out the work are obtained in accordance with SOPs and checked for correct operation and safety.
202.2	Load tanker	202.2.1	Tanker is positioned and set correctly to load LPG.
		202.2.2	Tanker is operated in accordance with manufacturer's specifications during loading.
		202.2.3	Tanker is loaded in according to SOPs.
202.3	Discharge LPG	202.3.1	Tanker is positioned to discharge LPG in accordance with safety requirements and SOPs.
		202.3.2	Customer requirements are actioned according to SOPs.
		202.3.3	LPG is discharged in accordance with legislative requirements and SOPs.
202.4	Notify completion of work	202.4.1	Records are maintained in accordance with SOPs.
		202.4.2	Delivery documentation is completed in accordance with SOPs and customer requirements.

Range of Variables

Appropriate personnel include site manager; clerical personnel; supervisors; other road tanker operators

Tools, equipment and materials may include pipes; hoses; valves and gauges; protective and safety equipment; delivery documentation

Factors which need to be taken into account when loading and discharging LPG may include curfews; number of customers; volume of LPG to be delivered; duration of shift; distance to be travelled; equipment type; Australian Dangerous Goods Code; site access; weather conditions; delivery area is checked for ignition sources and other hazards; local environment

SOPs information regarding transfer regulations and procedures include Australian Dangerous Goods Code; AS1596; State regulations/statutes; Company Standard Operating Procedures; Emergency Procedures Guidelines

Records/documentation may include OH&S and environmental legislative requirements; SOPs; delivery and customer documentation

Evidence Guide

Critical aspects of evidence

These will include vehicle manoeuvring and tanker operation; hazard handling procedures; loading and discharge procedures

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment. Assessment may be carried out by day or night, in varied weather conditions, but must adhere to defined safety and regulatory guidelines.

Specialised resources required for training and assessment include:
Appropriate equipment loading and discharging equipment; availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit should be assessed in conjunction with or after competency has been demonstrated in Unit UTG NGS 001 A Apply Procedures in the Workplace, Unit UTG NGS 002 A Working With Others, Unit UTG NGS 003 A Plan and Organise Work Activities and Unit UTG NGS 201 A Assess Operational Capability of Gas and Safety Equipment on Tankers and the following units of the National Road Transport Industry Competency Standards:

- Drive Heavy Rigid Vehicles (TDTC 497 A) or
- Drive Heavy Combination Vehicles (TDTC 597 A).

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit. An employee working at this level is required to:

Understand and apply SOPs including company delivery procedures; determine customer requirements and location; understand and apply manufacturer's specifications; effectively use equipment for transport and storage of gas; adhere to OH&S and emergency procedures; an awareness of the properties of LPG; communicate clearly and effectively; position and manoeuvre tanker; adhere to schedules; read meters

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design).

Key Competency	Level
Communicating ideas & information	1
Collecting, analysing & organising information	1
Planning and organising activities	1
Working with others in a team	1
Using mathematical ideas and techniques	1
Solving problems	1
Using technology	1

UTG NGS203 A
Load, Unload and Exchange Gas Cylinders

Descriptor: Loading, unloading and exchanging of gas cylinders.

Element		Performance criteria	
203.1.	Prepare worksite for loading, unloading and exchange of gas cylinders	203.1.1	Appropriate personnel are consulted to ensure the work is co-ordinated effectively with others involved on the work site.
		203.1.2	Materials necessary to complete the work are obtained in accordance with SOPs and checked against job requirements.
		203.1.3	Tools and equipment needed to carry out the work are obtained in accordance with SOPs and checked for correct operation and safety.
203.2	Load/unload truck	203.2.1	Truck is positioned and set correctly to load/unload LPG cylinders according to SOPs.
		203.2.2	Truck is loaded/unloaded in accordance with SOPs.
		203.2.3	Cylinders are loaded/unloaded carefully to ensure they remain in correct position.
203.3	Exchange cylinders	203.3.1	Empty cylinders are disconnected in accordance with legislative requirements and SOPs.
		203.3.2	Full cylinders are connected and checked to ensure connections are leak free.
		203.3.3	Leaking cylinders are dealt with in accordance with legislative requirements and SOPs.
203.4	Notify completion of work	203.4.1	Delivery documentation is completed in according to SOPs.
		203.4.2	Customer notification is undertaken in accordance with SOPs.
		203.4.3	Work completion is notified in accordance with SOPs.

Range of Variables

Appropriate personnel may include site manager; clerical personnel; supervisors; road tanker operators

Materials, tools and equipment may include cylinder trolley; hose/tools; leak detection devices; truck tail gate loader; tray gates and ropes

Records/documentation may include OH&S and environmental legislative requirements; SOPs; delivery and customer documentation; Emergency Procedures Guidelines

Delivery area is checked for ignition sources and other hazards. Smoking is not allowed.

Loading and unloading of cylinders is undertaken in both the terminal and customer's locations.

Evidence Guide

Critical aspects of evidence

These will include loading/unloading procedures for LPG cylinders; connection procedures; vehicle manoeuvring and truck operation; hazard handling procedures

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment. Assessment may be carried out by day or night, in varied weather conditions, but must adhere to defined safety and regulatory guidelines.

Specialised resources required for training and assessment

Availability of equipment for loading, unloading and exchanging gas cylinders; availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit should be assessed in conjunction with or after competency has been demonstrated in Unit UTG NGS 001 A Apply Procedures in the Workplace, Unit UTG NGS 002 A Working With Others and Unit UTG NGS 003 A Plan and Organise Work Activities and one of the units Unit UTG NGS 204 A Fill Gas Cylinders or Unit UTG NGS 205 A Refurbish Gas Cylinders and the following units of the National Road Transport Industry Competency Standards:

- Drive Heavy Rigid Vehicles (TDTC 497 A) or
- Drive Heavy Combination Vehicles (TDTC 597 A).

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit. An employee working at this level is required to:

Understand and apply SOPs including loading/unloading procedures, connection procedures, company delivery procedures; determine customer requirements and location; understand and apply manufacturer's specifications; effectively use equipment for transport and storage of gas; adhere to OH&S and emergency procedures; demonstrate an awareness of the properties of LPG; apply relevant legislation; operate truck tail gate loader; apply out-of-gas procedures; communicate clearly and effectively; billing documentation procedures

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design).

Key Competency	Level
Communicating ideas & information	1
Collecting, analysing & organising information	1
Planning and organising activities	1
Working with others in a team	1
Using mathematical ideas and techniques	1
Solving problems	1
Using technology	1

UTG NGS204 A
Fill Gas Cylinders

Descriptor: Fill gas cylinders.

Element		Performance criteria	
204.1	Prepare for filling of cylinders	204.1.1	Appropriate personnel are consulted to ensure the work is co-ordinated effectively with others involved on the work site.
		204.1.2	Availability of equipment is determined.
		204.1.3	Equipment is checked in accordance with SOPs and manufacturer's specifications to ensure it is operational.
204.2	Fill cylinders	204.2.1	Cylinders are visually checked to ensure they are safe and operational to enable filling in accordance with SOPs.
		204.2.2	Cylinders not meeting requirements are quarantined for further inspections/maintenance.
		204.2.3	Cylinders are filled and leak tested in accordance with SOPs.
		204.2.4	Leaky cylinders are identified, marked and quarantined in accordance with SOPs.
204.3	Move and store cylinders	204.3.1	Cylinders are lifted and moved in accordance with SOPs ensuring OH&S legislative requirements are observed.
		204.3.2	Cylinders are moved to correct location and stored in accordance with SOPs utilising the most efficient route.

Range of Variables

Appropriate personnel may include site manager; maintenance personnel; shift supervisor

Equipment may include cylinder trolley; hose/tools; leak detection devices; valves; gauges; spindles

Inspection checks are made to determine test date on cylinder is within the required period; company's ownership; corrosion and impact damage; valve threads are clean and in good condition; safety relief valve is capped and free from obstruction.

Legislative requirements are set out in AS 1596, AS 2030 and AS 3509.

Evidence Guide

Critical aspects of evidence

These will include cylinder checks and fault identifying; correct filling procedures; relocating and storing of cylinders; adhering to SOPs; OH&S and environmental legislative requirements

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment. Assessment may be carried out by day or night, in varied weather conditions, but must adhere to defined safety and regulatory guidelines.

Specialised resources required for training and assessment

Appropriate equipment to fill gas cylinders; availability of suitably qualified industry assessors; computer based system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit should be assessed in conjunction with or after competency has been demonstrated in Unit UTG NGS 001 A Apply Procedures in the Workplace, Unit UTG NGS 002 A Working With Others and Unit UTG NGS 003 A Plan and Organise Work Activities, either UTG NGS 203 A Load, Unload and Exchange Gas Cylinders or UTG NGS 205 A Refurbish Gas Cylinders and one of the following units of the National Road Transport Industry Competency Standards:

- Drive Heavy Rigid Vehicles (TDTC 497 A) or
- Drive Heavy Combination Vehicles (TDTC 597 A)
- Operate a Forklift (TDTC 1097 A).

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to perform tasks associated with the checking, filling and storing of gas cylinders and valves; carry out inspection procedures on cylinders and valves before and after filling; understand and adhere to SOPs including quarantine requirements; adhere to OH&S and environmental legislative requirements and guidelines; complete relevant documentation; demonstrate an awareness of gas characteristics

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design).

Key Competency	Level
Communicating ideas & information	1
Collecting, analysing & organising information	1
Planning and organising activities	1
Working with others in a team	1
Using mathematical ideas and techniques	1
Solving problems	1
Using technology	1

UTG NGS205 A
Refurbish Gas Cylinders

Descriptor: Inspect and refurbish gas cylinders.

Element		Performance criteria	
205.1	Prepare for refurbishment of gas cylinders	205.1.1	Appropriate personnel are consulted to ensure the work is co-ordinated effectively with others involved on the work site.
		205.1.2	Materials necessary to complete the work are obtained in accordance with SOPs and checked against job requirements.
		205.1.3	Tools and equipment needed to carry out the work are obtained in accordance with SOPs and checked for correct operation and safety.
		205.1.4	Cylinders are purged and prepared for inspection in accordance with SOPs.
205.2	Inspect and refurbish cylinders	205.2.1	Inspection is conducted in accordance with SOPs and legislative requirements.
		205.2.2	Cylinders are refurbished to ensure they are in a safe serviceable condition in accordance with manufacturer's specifications and SOPs.
		205.2.3	Cylinders that are damaged or do not comply to standards are coded and condemned in accordance with legislative requirements.
		205.2.4	Cylinders are re-stamped with new date which is documented in accordance with SOPs and legislative requirements.
		205.2.5	Cylinders are cleaned and painted in accordance with SOPs and OH&S legislative requirements.
205.3	Inspect and notify completion of work	205.3.1	Inspection results are documented in accordance with SOPs.
		205.3.2	Work completion is notified in accordance with SOPs.

Range of Variables

Appropriate personnel may include site manager; maintenance personnel; shift supervisor

Materials may include liquid withdrawal valves; vapour service valves; relief valves; contents gauges; in situ fill valves; multiport valves; sullage tubes

Tools and equipment may be required to perform painting, cleaning, refurbishing and testing of equipment.

Inspection checks are made to determine test date on cylinder is within the required period; organisation's ownership; corrosion and impact damage; valve threads are clean and in good condition; safety relief valve is capped and free from obstruction; internal deposits

Damage to cylinders may include valve spindle leaks; safety valve leak; corrosion; unacceptable paintwork; fire/heat damage; valve to cylinder connection leak; base/body damage leak; out-of-date; physical defects

Testing and refurbishing is covered by a range of legislative requirements and standards.

Evidence Guide

Critical aspects of evidence

These will include accurate inspecting and testing procedures for gas cylinders; refurbishment procedures; SOPs and legislative requirements; quality control procedures; operational safety; accurate reporting

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment. Assessment may be carried out by day or night, in varied weather conditions, but must adhere to defined safety and regulatory guidelines.

Specialised resources required for training and assessment

Appropriate equipment for inspecting and refurbishing gas cylinders; availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit should be assessed in conjunction with or after competency has been demonstrated in Unit UTG NGS 001 A Apply Procedures in the Workplace, Unit UTG NGS 002 A Working With Others and Unit UTG NGS 003 A Plan and Organise Work Activities, either UTG NGS 203 A Load, Unload and Exchange Gas Cylinders or UTG NGS 204 A Fill Gas Cylinders and one of the following units of the National Road Transport Industry Competency Standards:

- Drive Heavy Rigid Vehicles (TDTC 497 A) or
- Drive Heavy Combination Vehicles (TDTC 597 A)
- Operate a Forklift (TDTC 1097 A).

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit. An employee working at this level is required to:

Demonstrate an awareness of cylinder characteristics; perform tasks associated with the inspecting, testing and refurbishing of cylinders; adhere to company quality control and Australian Standards Testing Procedures; understand and apply SOPs; adhere to OH&S and environmental legislative requirements; identify and report cylinders faults; complete relevant documentation

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design).

Key Competency	Level
Communicating ideas & information	1
Collecting, analysing & organising information	2
Planning and organising activities	2
Working with others in a team	1
Using mathematical ideas and techniques	1
Solving problems	2
Using technology	1

UTG NGS206 B
Monitor and Control Transfer of LPG

Descriptor: Safely transfer LPG by pipelines and hoses between storage and transport facilities.

Element		Performance criteria	
206.1	Plan and prepare for transfer of LPG	206.1.1	Availability of equipment is determined.
		206.1.2	Equipment is checked in accordance with SOPs and manufacturer's specifications to ensure it is operational.
		206.1.3	Records are maintained in accordance with SOPs.
		206.1.4	Pipelines and hoses are connected in accordance with manufacturer's specifications and SOPs.
		206.1.5	Appropriate valves are operated in the correct sequence according to SOPs.
206.2	Transfer LPG	206.2.1	Transfer equipment is started in accordance with manufacturer's specifications and SOPs.
		206.2.2	LPG is transferred in accordance with SOPs.
		206.2.3	Pressure limits and liquid levels are monitored to ensure they are not exceeded and liquid flow meets equipment ratings.
		206.2.4	Emergency response is selected and applied in accordance with SOPs to control the situation and prevent further risk of personal injury, or of product, equipment or environmental damage.
		206.2.5	Transfer status and completion time is monitored and documented in accordance with SOPs.
206.3	Shutdown process	206.3.1	Emergency shutdown procedures are applied in the event of serious equipment failure or operational parameters being exceeded.
		206.3.2	Shutdown is completed in accordance with SOPs and operating conditions.
		206.3.3	Records/reports are maintained in accordance with SOPs.

Range of Variables

Equipment may include pumps and compressors; pipes; hoses; valves; gauges; tank connections and fittings; personal protective equipment and clothing; articulated arms earthing clamps and connections

The transfer of LPG may be undertaken by tank to tanker; ship to storage terminal; tanker to tank; tank to tank

Transfer equipment may include compressors; transfer pumps

Emergency Response may include gas leaks and fire; equipment failure; hazards and incidents

Documentation may include SOPs; OH&S and environmental legislative requirements; manufacturer's specifications; Australian Standards; trucks, rail or ships may be used to unload tankers.

Evidence Guide

Critical aspects of evidence

Transfer procedures; safe fill levels and pressure levels; OH&S requirements including safe handling procedures; correctly diagnosing and assessing faults; accurate documenting faults; applying emergency response systems; use of emergency equipment including fire fighting equipment

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment. Assessment may be carried out by day or night, in varied weather conditions, but must adhere to defined safety and regulatory guidelines.

Specialised resources required for training and assessment

appropriate equipment to transfer LPG; availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit requires, as an entry, attainment of the Certificate II in Gas Operations and related units of competence if pursuing a Certificate III in Gas Operations.

Entry may also be accepted from those who have achieved an equivalent AQF level two-qualification competency outcome in an *allied industry*. As such, they would be expected to have attained sufficient relevant underpinning knowledge and skills, which could be used to accelerate their progress through this unit to the Certificate III in Gas Operations. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

Additionally, this unit should be assessed in conjunction with or after competency has been demonstrated in Unit UTG NGS 207 B Process LPG, UTG NGS 208 B Perform Minor Maintenance on Gas Processing/Storage Facilities and Equipment and either UTG NGS 209 B Co-ordinate Repairs of Faults in Gas Processing/Storage Facilities and Equipment or UTG NGS 210 B Control

Storage of LPG in Terminal and the following Frontline Management III Competency Standards:

- (BSXFM 1301 A) Manage Personal Work Priorities and Professional Development
- (BSXFM 1302 A)Provide Leadership in the Workplace
- (BSXFM 1303 A)Establish and Manage Effective Workplace Relationships, and
- (BSXFM 1308 A) Develop and Maintain a Safe Workplace and Environment

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit. An employee working at this level is required to:

Competently undertake the management of static electricity; apply transfer methods for pipes and hoses; operate transfer equipment including compressors and pumps; select, test and set up transfer equipment; make appropriate adjustments to equipment to optimise production; understand and adhere to SOPs; work safely applying OH&S and emergency procedures; demonstrate an awareness of the properties of LPG; accurately record and maintain relevant information

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	2
Collecting, analysing & organising information	1
Planning and organising activities	2
Working with others in a team	1
Using mathematical ideas and techniques	1
Solving problems	2
Using technology	2

UTG NGS207 B
Process LPG

Descriptor: Process LPG including the manufacture of TLPG, LPG and blending/mixing odourising LPG.

Element		Performance criteria	
207.1	Prepare to process LPG	207.1.1	Equipment is checked in accordance with SOPs and manufacturer's specifications to ensure it is operational.
		207.1.2	Records are maintained in accordance with SOPs.
		207.1.3	Pipelines and hoses are connected in accordance with manufacturer's specifications and SOPs.
		207.1.4	Appropriate valves are operated in the correct sequence according to SOPs.
207.2	Process LPG	207.2.1	LPG is processed effectively in a safe and efficient manner in accordance with SOPs.
		207.2.2	Adjustment and monitoring of the controls are performed in accordance with SOPs.
		207.2.3	Emergency response is selected and applied in accordance with SOPs to control the situation and prevent further risk of personal injury, or of product, equipment or environmental damage.
		207.2.4	Equipment/process variations or irregularities are identified and reported to appropriate personnel in accordance with SOPs.
		207.2.5	Repairs outside operator's area of responsibility are reported to the nominated person/section for rectification.
		207.2.6	Records are maintained in accordance with SOPs.

Element		Performance criteria	
207.3	Shutdown equipment	207.3.1	Pre-shutdown checks are completed and documented in accordance with SOPs.
		207.3.2	Work completion is notified in accordance with SOPs. Emergency shutdown procedures are applied in the event of serious equipment failure or operational parameters being exceeded.
		207.3.3	Shutdown is completed in accordance with SOPs and operating conditions.
		207.3.4	Records/reports are maintained in accordance with SOPs.

Range of Variables

Equipment may include pumps; valves; vessels; personal protective equipment and clothing; control and monitoring equipment; mixing equipment; sampling equipment

Processing LPG may include blending/mixing LPG; manufacturing TLPG; odourising LPG

Process monitoring may include the following checks, stock levels; pressures; water sprays; security; gas heating valves; shutdown system; odourant dosing levels

Emergency Response may include gas leaks and fire; equipment failure; hazards and incidents

Documentation may include SOPs; OH&S and environmental legislative requirements; manufacturer's specifications; Australian Standards

Evidence Guide

Critical aspects of evidence

Identifying of variations and irregularities during processing; LPG process operations; monitoring equipment operations; monitoring operational safety during processing; OH&S requirements including safe handling procedures; correctly diagnosing and assessing faults; applying emergency response systems; use of emergency equipment including fire fighting equipment

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment. Assessment may be carried out by day or night, in varied weather conditions, but must adhere to defined safety and regulatory guidelines.

Specialised resources required for training and assessment

- appropriate equipment for processing gas

- availability of suitably qualified industry assessors
- system which facilitates recording of trainees' profiles and progress
- facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit requires, as an entry, attainment of the Certificate II in Gas Operations and related units of competence if pursuing a Certificate III in Gas Operations.

Entry may also be accepted from those who have achieved an equivalent AQF level two-qualification competency outcome in an *allied industry*. As such, they would be expected to have attained sufficient relevant underpinning knowledge and skills, which could be used to accelerate their progress through this unit to the Certificate III in Gas Operations. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

Additionally, this unit should be assessed in conjunction with or after competency has been demonstrated in Unit UTG NGS 206 B Monitor and Control Transfer of LPG and Unit UTG NGS 208 B Perform Minor Maintenance on Gas Processing/Storage Facilities and Equipment and either UTG NGS 209 B Co-ordinate Repair of faults in Gas Processing/Storage Facilities and Equipment or UTG NGS 210 B Control Storage of LPG in Terminal and the following Frontline Management III Competency Standards:

- (BSXFM 1301 A) Manage Personal Work Priorities and Professional Development
- (BSXFM 1302 A) Provide Leadership in the Workplace
- (BSXFM 1303 A) Establish and Manage Effective Workplace Relationships and,
- (BSXFM 1308 A) Develop and Maintain a Safe Workplace and Environment

Knowledge and Skills:

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit. An employee working at this level is required to demonstrate they can:

Carry out appropriate processing, handling and storage operations of LPG; accurately mix/blend the properties of LPG; make adjustments to the production process; analyse operations and correctly adjust equipment within operational parameters; understand and adhere to SOPs in particular to identify variations and irregularities, corrective action, reporting and recording procedures; understand and apply OH&S and emergency procedures

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	1
Collecting, analysing & organising information	2
Planning and organising activities	1
Working with others in a team	1
Using mathematical ideas and techniques	1
Solving problems	2
Using technology	2

UTG NGS208 B
Perform Minor Maintenance on Gas Processing/Storage Facilities and Equipment

Descriptor: Perform minor maintenance on gas processing facilities and equipment

Element		Performance criteria	
208.1	Prepare and plan for maintenance activities	208.1.1	All necessary and appropriate facilities, tools, test and measurement instruments, materials and components to allow the completion of the work are selected and used.
		208.1.2	The facilities/equipment is made safe by ensuring it is safely isolated, depressurised, purged, tagged and locked out before allowing any repair or maintenance work to be undertaken.
		208.1.3	Equipment faults are identified through inspection and testing of the operational equipment in accordance with SOPs.
		208.1.4	Fault-finding and troubleshooting techniques are applied to operational systems/equipment in order to identify any repairs or maintenance which may need to be undertaken.
208.2	Perform Minor Maintenance on gas processing/ storage facilities	208.2.1	Adjustments to calibration and test equipment and devices are made to ensure equipment and devices operate within specified ranges and to maintain correct flow parameters to ensure gas availability.
		208.2.2	All manufacturers' specifications and SOPs are strictly followed.
		208.2.3	Parts are replaced in accordance with manufacturer's specification, SOPs and relevant legislation to ensure correct operation of equipment.
		208.2.4	All necessary and appropriate plans, drawings and text are selected and interpreted in order to carry out servicing of equipment.

Element		Performance criteria	
		208.2.5	Maintenance is performed in accordance with acceptable standards of cleanliness and with a minimum of waste and re-work.
		208.2.6	Work area is isolated and permit to work is obtained to enable repair to proceed in accordance with OH&S and environmental legislative requirements and SOPs.
208.3	Record and report results	208.3.1	Maintenance results are documented and recorded using appropriate SOPs and in accordance with relevant Australian Standards.
		208.3.2	Work completion is notified in accordance with SOPs.
		208.3.3	Where appropriate permit to work is cancelled and signed off at completion of repair.

Range of Variables

Pressure vessels and fittings may include such items as pressure vessel; vaporisers; earth connections; relief valves; emergency shut-down valving (eg. ISC valves); manual shut-down valving; pipework; vessel footings; regulators; hoses and couplings; pumps; compressors

Types of variations or irregularities may include corrosion; impact damage; point deterioration; leakage; non-operability of shutdown systems; equipment out of calibration.

Appropriate parts to be replaced may include excess flow valves; relief valves; pressure regulators/springs; pump seals/compressor seals; pressure gauges; bypass valves; meters; solenoids; valves; break away couplings; meter heads

Type of adjustments include downstream pressure adjustment; storage pressure adjustment (vaporiser systems only); bypass pressure adjustment for pumps

Documents may include SOPs; OH&S and environmental legislative requirements; Australian Standards; manufacturer's specifications; work permits

Documentation may require the use of PC's or other electronic media.

Evidence Guide

Critical aspects of evidence

Inspecting and testing procedures; adjusting and replacing procedures; adhering to SOPs; OH&S legislative requirements; correctly diagnosing and assessing faults; applying correct maintenance procedures

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment. Assessment may be carried out by day or night, in varied weather conditions, but must adhere to defined safety and regulatory guidelines.

Specialised resources required for training and assessment

Appropriate equipment for maintaining processing/storage facilities; availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit requires, as an entry, attainment of the Certificate II in Gas Operations and related units of competence if pursuing a Certificate III in Gas Operations.

Entry may also be accepted from those who have achieved an equivalent AQF level two-qualification competency outcome in an *allied industry*. As such, they would be expected to have attained sufficient relevant underpinning knowledge and skills, which could be used to accelerate their progress through this unit to the Certificate III in Gas Operations. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

Additionally, this unit should be assessed after competency has been demonstrated, Unit UTG NGS 206 B Monitor and Control Transfer of LPG, Unit UTG NGS 207 B Process LPG, and either UTG NGS 209 B Co-ordinate Repair of Faults in Gas Processing/Storage Facilities and Equipment or UTG NGS 210 B Control Storage of LPG in Terminal and the following Frontline Management III Competency Standards:

- (BSXFM 1301 A) Manage Personal Work Priorities and Professional Development
- (BSXFM 1302 A) Provide Leadership in the Workplace
- (BSXFM 1303 A) Establish and Manage Effective Workplace Relationships and,
- (BSXFM 1308 A) Develop and Maintain a Safe Workplace and Environment

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to demonstrate and awareness of types of test equipment and their uses; operate equipment such as pressure vessels and associated fittings as listed in the Range of Variables; identify the types of adjustments required; accurately replace and adjust parts in accordance with manufacturer's specifications; perform tasks associated with the inspecting and testing of pressure vessels; identify and report faults in pressure vessels; perform tests on equipment; understand and adhere to SOPs; adhere to OH&S and environmental legislative requirements and guidelines; accurately record relevant information

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	2
Collecting, analysing & organising information	2
Planning and organising activities	2
Working with others in a team	1
Using mathematical ideas and techniques	1
Solving problems	2
Using technology	1

UTG NGS209 B
Co-ordinate Repair of Faults in Gas Processing/Storage Facilities and Equipment

Descriptor: Co-ordinate the repair of faults, which may occur during the processing and storing of LPG.

Element		Performance Criteria	
209.1	Plan and prepare to co-ordinate repairs	209.1.1	Appropriate personnel are consulted to ensure the work is co-ordinated effectively with others involved on the work site.
		209.1.2	Materials necessary to complete the work are obtained in accordance with SOPs and checked against job requirements.
		209.1.3	Possible impact of fault is reported to appropriate personnel in accordance with SOPs.
209.2	Co-ordinate repairs	209.2.1	Repair work is monitored to ensure activities are carried out to SOPs, permit to work, and minimal impact occurs on existing operations and environment.
		209.2.2	The replacement or repair of faulty, worn, damaged or insecure parts is monitored or secured without unnecessary damage or distortion to the surrounding environment or other services.
		209.2.3	Storage/processing facility/equipment conditions and all environmental hazards are monitored to ensure their effect is limited or controlled.
		209.2.4	All required testing procedures are followed and requirements met to verify that the facilities/equipment have been made safe for work to commence.
209.3	Recommission systems and equipment	209.3.1	Repaired/installed equipment is brought back on line in accordance with SOPs.
		209.3.2	Systems are monitored or activated to ensure the systems are operating both safely and effectively.
		209.3.3	Permit to work is closed out and site/system restored to normal operation.
		209.3.4	Reports are completed in accordance with SOPs.

Range of Variables

Appropriate personnel include maintenance employees; contractors; managers/supervisors

Necessary materials may include gas detectors; purging gas; hand tools; LPG hoses; flare; valves; compressor; vessels; pump; personal protective equipment and clothing; road tanker; control and instrumentation equipment

Types of faults may include gas leaks; electrical problems; over filled vessel; compressor failure; pump failure; out of current inspection status; gauge failure; hose rupture/leaks; instruments out of calibration; non-flow of LPG; cylinder scales out of calibration; meter out of calibration

Documentation may include: item maintenance record; work permit; job card documentation to inform relevant authorities, company personnel, customer or manufacturer; SOPs; OH&S and environmental requirements documentation

Evidence Guide

Critical aspects of evidence

These include identifying and analysing faults; repairing of faults; the use of testing and inspecting equipment; return to service testing; SOPs and legislative requirements

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment. Assessment may be carried out by day or night, in varied weather conditions, but must adhere to defined safety and regulatory guidelines.

Specialised resources required for training and assessment

Appropriate equipment for diagnosing processing and storage faults; availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit requires, as an entry, attainment of the Certificate II in Gas Operations and related units of competence if pursuing a Certificate III in Gas Operations.

Entry may also be accepted from those who have achieved an equivalent AQF level two-qualification competency outcome in an *allied industry*. As such, they would be expected to have attained sufficient relevant underpinning knowledge and skills, which could be used to accelerate their progress through this unit to the Certificate III in Gas Operations. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

Additionally, this unit should be assessed after competency has been demonstrated, Unit UTG NGS 206 B Monitor and Control Transfer of LPG, Unit UTG NGS 207 B Process LPG, Unit UTG NGS 208 B – Perform Minor Maintenance on Gas Processing/Storage Facilities and Equipment and the following Frontline Management III Competency Standards:

- (BSXFM 1301 A) Manage Personal Work Priorities and Professional Development
- (BSXFM 1302 A) Provide Leadership in the Workplace
- (BSXFM 1303 A) Establish and Manage Effective Workplace Relationships and,
- (BSXFM 1308 A) Develop and Maintain a Safe Workplace and Environment

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to inspect, test and identify problems and faults in pressure vessels, consider alternatives and successfully implement solutions; demonstrate an awareness of the properties of LPG; select and use appropriate equipment; carry out repairs in accordance with SOPs; understand and apply OH&S and emergency procedures; accurately record and maintain relevant documentation

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	1
Collecting, analysing & organising information	2
Planning and organising activities	2
Working with others in a team	1
Using mathematical ideas and techniques	2
Solving problems	2
Using technology	2

UTG NGS210 B
Control Storage of LPG in Terminal

Descriptor: Control the storage of LPG in terminals.

Element		Performance criteria	
210.1	Prepare for the storage of LPG	210.1.1	Appropriate personnel are consulted to ensure the work is co-ordinated effectively with others involved on the work site.
		210.1.2	Availability of equipment is determined.
		210.1.3	Equipment is checked in accordance with SOPs and manufacturer's specifications to ensure it is operational.
		210.1.4	Pipelines and hoses are connected in accordance with manufacturer's specifications and SOPs.
		210.1.5	Appropriate valves are operated in the correct sequence according to SOPs.
210.2	Control Storage of LPG	210.2.1	LPG is stored in a safe and efficient manner in accordance with SOPs.
		210.2.2	Condition of LPG is controlled within specifications and in accordance with legislative requirements.
		210.2.3	Visual inspections of storage vessels and equipment are undertaken in accordance with SOPs.
		210.2.4	Site security is maintained in accordance with SOPs.
		210.2.5	Abnormalities are reported to appropriate personnel.
		210.2.6	Fault-finding and troubleshooting techniques are applied to operational systems/equipment in order to identify any repairs or maintenance which may need to be undertaken.

Element		Performance criteria	
		210.2.7	Information concerning the operation of the storage system is monitored and conveyed to relevant personnel to ensure safe and efficient operation.
		210.2.8	Emergency response is selected and applied in accordance with SOPs to control the situation and prevent further risk of personal injury, or of product, equipment or environmental damage.
210.3	Record/report storage activities	210.3.1	Documentation concerning storage/transfer activities are completed and reported to appropriate personnel in accordance with SOPs.
		210.3.2	Maintenance requirements are identified and reported to appropriate personnel.

Range of Variables

Appropriate personnel may include site manager; shift supervisor; site security personnel; maintenance personnel

LPG is transferred by either pump or compressor to either LPG tanks or to cylinders.

Equipment may include pumps and compressors; valves; vessels; personal protective equipment and clothing; control and monitoring equipment; mixing equipment; sampling equipment

Legislative requirements are set out in AS 1596.

Monitoring of storage facilities may include monitoring, pressure; temperature; levels; corrosion; gas leaks; stock levels; pressures; security; temperature; water sprays; shutdown system

Emergency Responses include gas leaks and fire; equipment failure; hazards and incidents

Documents may include maintenance records; SOPs; OH&S and environmental legislative requirements

Documentation may require the use of PCs or other electronic media.

Evidence Guide

Critical aspects of evidence

These will include monitoring of product and safe fill levels are in accordance with SOPs; transferring of product in accordance with SOPs; storage conditions of product is controlled within specifications and SOPs; abnormalities are reported to appropriate personnel; correctly diagnosing and assessing faults; applying emergency response systems; knowledge of permit to work system including types of permits and limitations; applying emergency equipment including fire fighting equipment

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment. Assessment may be carried out by day or night, in varied weather conditions, but must adhere to defined safety and regulatory guidelines.

Specialised resources required for training and assessment

Appropriate equipment for LPG transfer and storage; availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit requires, as an entry, attainment of the Certificate II in Gas Operations and related units of competence if pursuing a Certificate III in Gas Operations.

Entry may also be accepted from those who have achieved an equivalent AQF level two-qualification competency outcome in an *allied industry*. As such, they would be expected to have attained sufficient relevant underpinning knowledge and skills, which could be used to accelerate their progress through this unit to the Certificate III in Gas Operations. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

Additionally, this unit should be assessed after competency has been demonstrated, Unit UTG NGS 206 B Monitor and Control Transfer of LPG, Unit UTG NGS 207 B Process LPG, Unit UTG NGS 208 B Perform Minor Maintenance on Gas Processing/Storage Facilities and Equipment and the following Frontline Management III Competency Standards:

- (BSXFM 1301 A) Manage Personal Work Priorities and Professional Development
- (BSXFM 1302 A) Provide Leadership in the Workplace
- (BSXFM 1303 A) Establish and Manage Effective Workplace Relationships and,
- (BSXFM 1308 A) Develop and Maintain a Safe Workplace and Environment

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to monitor, identify and report any problems associated with the transfer processes and procedures; operate systems such as pumps, compressors and valving, shutdown systems; carry out inspection test procedures; understand and apply SOPs; adhere to OH&S and environmental legislative requirements including emergency procedures; demonstrate an awareness of the properties of LPG; interpret technical drawings; understand the characteristics, operation capabilities and limitations of tools and equipment; communicate effectively with team members; understand permit to work systems; operate gas analysis equipment; understand the alarm and communications systems

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	3
Collecting, analysing & organising information	2
Planning and organising activities	2
Working with others in a team	2
Using mathematical ideas and techniques	2
Solving problems	3
Using technology	2

UTG NGS211 A
Control LPG Storage/Processing Operations

Descriptor: Control LPG Storage/Processing Operations.

Element		Performance criteria	
211.1	Plan control of operations	211.1.1	Resources to meet storage and/or processing operations are determined in accordance with SOPs.
		211.1.2	Processing priorities are determined.
		211.1.3	Work schedules are adjusted in response to operational variations, unexpected events.
211.2	Control operations	211.2.1	Operating conditions include monitoring to ensure the correct operating parameters are maintained.
		211.2.2	Information concerning the operation of the storage/processing system is monitored and conveyed to relevant personnel and other work areas to ensure safe and efficient operation of the pipeline system.
		211.2.3	Work permits are authorised, recorded and monitored to allow activities to be undertaken or cancelled.
		211.2.3	Alarms and codes are correctly interpreted and acknowledged to ensure the correct response strategy is selected and applied to the situation.
		211.2.4	Emergency response are selected and applied in accordance with SOPs to control the situation and prevent further risk of personal injury, or of product, equipment or environmental damage.
		211.2.5	Reports are completed in accordance with SOPs.
		211.2.6	Emergency response systems are applied when required.
211.3	Shut down operations	211.3.1	Emergency shutdown procedures are applied in the event of serious equipment failure or operational parameters being exceeded.
		211.3.2	Shutdown is completed in accordance with SOPs and operating conditions.
		211.3.3	Records/reports are maintained in accordance with SOPs.

Range of Variables

Resources to meet storage and/or processing operations may include appropriately experienced and qualified personnel; pumps and compressors; valves; vessels; personal protective equipment and clothing; control and monitoring equipment; mixing equipment ;;sampling equipment; air equipment

Operational variations, unexpected events may include emergencies including gas leaks and fire; equipment failure; LPG supply levels; electrical supply failure

Monitoring of storage/processing facilities may include monitoring, pressure; temperature; levels; corrosion; gas leaks; stock levels; pressures; security; temperature

Relevant personnel may include site manager; shift supervisor; maintenance personnel; company employees; contractors

Types of equipment faults may include electrical problems; over filled vessel; compressor failure; pump failure; out of current inspection status; gauge failure; hose rupture/leaks; instruments out of calibration; non-flow of LPG

Reports may include routine inspections (daily readings, monthly checks); scheduled maintenance activities; mandatory or statutory inspections; hazard and incident reports

Evidence Guide

Critical aspects of evidence

Critical aspects of evidence will include: applying emergency response systems; knowledge of permit to work system including types of permits and limitations; use of emergency equipment including fire fighting equipment; monitoring of product and safe fill levels are in accordance with SOPs; transferring of product in accordance with SOPs; storage processing conditions of product

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment. Assessment may be carried out by day or night, in varied weather conditions, but must adhere to defined safety and regulatory guidelines.

Specialised resources required for training and assessment

Availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit should be assessed after competency has been demonstrated in Unit UTG NGS 206 B Monitor and Control Transfer of LPG, Unit UTG NGS 207 B Process LPG, Unit UTG NGS 208 B Perform Minor Maintenance on Gas Processing/Storage Facilities and either Unit UTG NGS 209 B Co-ordinate Repair of Faults in Gas Processing/Storage Facilities or Unit UTG NGS 210 B Control Storage of LPG in Terminal and the following Frontline Management III Competency Standards:

- (BSXFM 1301 A) Manage Personal Work Priorities and Professional Development
- (BSXFM 1302 A) Provide Leadership in the Workplace
- (BSXFM 1303 A) Establish and Manage Effective Workplace Relationships and,
- (BSXFM 1308 A) Develop and Maintain a Safe Workplace and Environment

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to understand and apply SOPs; understand the alarm and communications systems; adhere to OH&S and environmental legislative requirements including emergency procedures; demonstrate an awareness of the properties of LPG; monitor, identify and report any problems associated with the transfer processes and procedures; operate systems such as pumps, compressors and valving, shutdown systems; carry out inspection test procedures; communicate effectively; understand permit to work systems; operate gas analysis equipment

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	3
Collecting, analysing & organising information	3
Planning and organising activities	3
Working with others in a team	3
Using mathematical ideas and techniques	2
Solving problems	3
Using technology	3

UTG NGS301 A
Construct and Lay Pipelines

Descriptor: Construct and lay gas distribution pipelines

Element		Performance criteria	
301.1	Prepare pipeline installation	301.1.1	Plans, specifications and other relevant information are received.
		301.1.2	Alignment of gas main is confirmed and the location of other services is received.
		301.1.3	Appropriate personnel are consulted to ensure the work requirement is identified in consultation with others involved on the work site.
		301.1.4	Materials necessary to complete the work are identified and obtained in accordance with SOPs.
		301.1.5	Tools and equipment needed to carry out the work are obtained in accordance with SOPs and checked for correct operation and safety.
301.2	Construct, lay and insert pipelines	301.2.1	Pipelines are constructed according to relevant SOPs and legislative requirements
		301.2.2	Pipelines for renewal are correctly identified.
		301.2.3	Pipelines are installed and/or inserted in accordance with SOPs and legislative requirements.
301.3	Complete work	301.3.1	Work is completed in accordance with SOPs.
		301.3.2	Final inspections are undertaken to ensure the work conforms with requirements.
		301.3.3	Work completion is notified in accordance with SOPs.

Range of Variables

Other services may include water; electricity; telecommunication; sewerage and stormwater authorities; other pipeline authorities

Appropriate personnel may include site manager; maintenance personnel; shift supervisor

Materials required for pipeline installation may include various pipes (eg. p.v.c, nylon, pe, cast iron); fittings; coating material; bedding materials; detecta tape; trace wire

Tools and equipment required for pipeline installation may include but is not limited to pneumatic tools and equipment; boring equipment; plastic fusion and solvent glue kits; welding plant equipment; various hand tools; trucks; slings; generators; location equipment; electrofusion equipment; window cutter; steel plates; administrative equipment for documentation; lifting equipment

Safe working procedures in SOPs may include wearing personal protective equipment; controlling traffic; controlling access to the site; ensuring trenches are correctly shored; using welding screens; the availability of correct fire extinguishers; enterprise procedures and practices

Legislative requirements may include OH&S; environmental; traffic control

Evidence Guide

Critical aspects of evidence

Other service locations; pipeline constructing; jointing procedures; coating procedures to protect against corrosion; OH&S and environmental legislative requirements; plans are used to carry out work; data recording

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment. Assessment may be carried out by day or night, in varied weather conditions, but must adhere to defined safety and regulatory guidelines.

Specialised resources required for training and assessment

Availability of appropriate equipment to construct and lay pipelines; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit should be assessed in conjunction with or after competency has been demonstrated in Unit UTG NGS 001 A Apply Procedures in the Workplace, Unit UTG NGS 002 A Working With Others, Unit UTG NGS 003 A Plan and Organise Work Activities, Unit UTG NGS317 B - Use plans, drawings and specifications and Unit UTG NGS 318 A Use and maintain small plant, equipment and tools and carry-out minor mechanical maintenance

The co-requisites to this unit are Units UTG NGS 302 A Prepare, Excavate and Reinstate Site

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to identify appropriate pipeline materials; adhere to Australian Standards; identify reticulation systems and use plans and specifications; understand the characteristics and operation capabilities and limitations of tools and equipment; operate tools and equipment within their capabilities and limitations; demonstrate an awareness of the various fittings required; document incident following procedures including those required for minor incidents, fire safety & first aid; prepare work site; communicate information to members of the public, the team, and other parties such as communications, water and electricity suppliers; analyse information to solve problems; follow OH&S and environmental legislative requirements

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	2
Collecting, analysing & organising information	1
Planning and organising activities	1
Working with others in a team	2
Using mathematical ideas and techniques	1
Solving problems	2
Using technology	1

UTG NGS302 A
Prepare, Excavate and Reinstate Site

Descriptor: Prepare and excavate trenches prior to pipes being laid and site reinstated.

Element		Performance criteria	
302.1	Prepare site	302.1.1	Relevant authorities are contacted to determine location of other services.
		302.1.2	Relevant plans, codes, standards and drawings of proposed works are checked.
		302.1.3	Appropriate tools, materials and equipment are selected and obtained according to job requirements.
		302.1.4	Site is prepared in accordance with specifications and plans, relevant OH&S and traffic legislation and SOPs.
302.2	Set out and excavate trench	302.2.1	Location and depth of trenches is determined from job specifications.
		302.2.2	Trench location is set out and clearly marked with appropriate marking material.
		302.2.3	Manual support is provided to machine operator with excavation of trenches, shoring or battering and exposing other services.
		302.2.4	Trench depths and grades are checked against specifications.
		302.2.5	Other services are marked for hand digging.
302.3	Reinstate site	302.3.1	Packing is installed to underside of pipes.
		302.3.2	Backfilling is performed in accordance with SOPs.

Range of Variables

Other services may include water; electricity; telecommunication; sewerage and stormwater authorities; other pipeline authorities

Excavation tools may include hand tools; backhoe; jack hammer; trenching machine; boring equipment; compacting equipment

Excavation may occur in a variety of conditions including varying surface types such as open ground (lawn/garden), bitumen or concrete; wet/dry conditions; in a variety of traffic levels such as road or rail; in differing soil types such as rock, clay or sand; day or night; city or rural areas

Surface reinstatements may include bitumen; concrete; loam/top soil; dolomite; lawn

Backfill may include sand padding; spoil; stone free soil; crushed rock; rubble

Evidence Guide

Critical aspects of evidence

Correctly identifying location of other utilities; safe accurate excavating procedures; correct excavating specifications; reinstating of site; adhering to SOPs; OH&S and environmental legislative requirements; safely setting up a work site

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment. Assessment may be carried out by day or night, in varied weather conditions, but must adhere to defined safety and regulatory guidelines.

Specialised resources required for training and assessment

Appropriate equipment to prepare, excavate and reinstate site; availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit should be assessed in conjunction with or after competency has been demonstrated in Unit UTG NGS 001 A Apply Procedures in the Workplace, Unit UTG NGS 002 A Working With Others, Unit UTG NGS 003 A Plan and Organise Work Activities, Unit UTG NGS 170 A Construct and Lay Pipes and UTG NGS317 B Use plans, drawings and specifications and UTG NGS 318 A Use and maintain small plant, equipment and tools and carry-out minor mechanical maintenance.

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to set up a site safely; excavate, shore and reinstate a trench; observe legislative requirements for the operation of equipment; understand the characteristics and operation capabilities and limitations of tools and equipment; show an awareness of the various types of hazardous material and special handling procedures; adhere to the requirements for parking and securing the equipment; observe traffic regulations; understand and apply SOPs including company communication procedures; adhere to OH&S and environmental legislative requirements; communicate effectively with team members

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	2
Collecting, analysing & organising information	1
Planning and organising activities	2
Working with others in a team	2
Using mathematical ideas and techniques	2
Solving problems	1
Using technology	1

UTG NGS303 B
Commission/Decommission Pipelines

Descriptor: Commission/decommission gas distribution pipelines.

Element		Performance criteria	
303.1	Commissioning/ decommissioning planning procedure	303.1.1	Appropriate personnel are consulted to ensure the work is co-ordinated effectively with others involved on the work site.
		303.1.2	Materials necessary to complete the work are obtained in accordance with SOPs and checked against job requirements.
		303.1.3	Tools and equipment needed to carry out the work are obtained in accordance with SOPs and checked for correct operation and safety.
		303.1.4	Plans are prepared to ensure that procedures are performed in the correct sequence.
		303.1.5	Approvals are obtained where necessary from appropriate authorities to ensure commissioning process proceeds in accordance with the plan.
303.2	Commission /decommission system	303.2.1	The pipeline system is brought on line/taken off line in accordance with SOPs.
		303.2.2	Adjustments are made and reported in accordance with SOPs.
		303.2.3	Reports are prepared in accordance with SOPs and legislative requirements to maintain the historical record.
303.3	Inspect test and notify completion of work	303.3.1	Tools and equipment appropriate to the testing requirements are selected and used in accordance with manufacturer's specifications, SOPs and legislative requirements.
		303.3.2	Pipeline systems are tested in accordance with SOPs and legislative requirements.
		303.3.3	Final inspections are undertaken to ensure pipeline conforms to SOPs.
		303.3.4	Work completion is notified in accordance with SOPs.

Range of Variables

Appropriate personnel may include manager and supervisors; maintenance personnel; contractors; company personnel

Tools, materials and equipment may include hand tools including power operated; power operated tools; plant; emergency equipment; electrical and electronic test equipment; gas detectors; air compressor; water pump

Appropriate authorities may include local councils; road authority; sewerage and stormwater authorities; providers of services such as electricity, water and telephones

Pipeline systems may include pipes; valves; compressors; electrical and electronic components; PLCs; Cathodic Protection; pressure regulation and meters

Documentation may include:

SOPs; OH&S and environmental legislative requirements; manufacturer's specifications; appropriate authority approvals; Legislative requirements may include following OH&S and EPA legislation and traffic control.

Evidence Guide

Critical aspects of evidence

Commissioning and decommission planning procedures; pipeline testing and adjusting procedures; adhering to SOPs; environmental and safety legislation

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment.

Specialised resources required for training and assessment

Availability of appropriate equipment to commission and decommission pipelines; availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit requires, as an entry, attainment of the Certificate II in Gas Operations and related units of competence.

Entry may also be accepted from those who have achieved an equivalent AQF level two-qualification competency outcome in an *allied industry*. As such, they would be expected to have attained sufficient relevant underpinning knowledge and skills which could be used to accelerate their progress through this unit to the Certificate III in Gas Operations. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

Additionally, this unit should be assessed in conjunction with or after competency has been demonstrated in three of the following Units: Unit UTG NGS 306 B Co-ordinate Pipeline Repair and Modifications, Unit UTG NGS 230 A Launch and Recover PIG, Unit UTG NGS 310 B Perform Routine Maintenance on Pipeline, Facilities and Equipment, Unit UTG NGS 313 B Control Gas Odourisation and Unit UTG NGS 316 B Co-ordinate Construction, Laying and Testing of Gas Distribution Pipelines and the following Frontline Management III Competency Standards:

- (BSXFM 1301 A) Manage Personal Work Priorities and Professional Development
- (BSXFM 1302 A) Provide Leadership in the Workplace
- (BSXFM 1303 A) Establish and Manage Effective Workplace Relationships and,
- (BSXFM 1308 A) Develop and Maintain a Safe Workplace and Environment

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to accurately test and adjust systems; monitor electrical and electronic systems; understand and adhere to SOPs including maintaining appropriate reporting and recording systems; monitor valves and regulators; understand the characteristics and operation capabilities and limitations of tools and equipment; effectively interpret and analyse data and standards; accurately calibrate and repair systems; implement and adhere to safety procedures and EPA requirements; accurately recording and reporting relevant information

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	2
Collecting, analysing & organising information	2
Planning and organising activities	2
Working with others in a team	2
Using mathematical ideas and techniques	2
Solving problems	2
Using technology	1

UTG NGS304 A
Coat Pipelines

Descriptor: Undertake inspection, tests and coating of steel gas pipelines.

Element		Performance criteria	
304.1	Prepare pipelines inspection/testing	304.1.1	Inspection of pipeline coating is planned and prepared for in accordance with SOPs.
		304.1.2	Tools and equipment needed to carry out the work are obtained in accordance with SOPs and checked for correct operation and safety.
		304.1.3	Appropriate personnel are consulted to ensure the work is co-ordinated effectively with others involved on the work site.
		304.1.4	Pipeline location is identified to determine workplace.
304.2	Inspect and test pipeline coatings	304.2.1	Pipeline coatings are visually inspected to determine condition and location of irregularities.
		304.2.2	Pipeline testing is planned and prepared for in accordance with SOPs.
		304.2.3	Pipeline testing is carried out as required to ensure system conforms to required operating parameters.
		304.2.4	Information related to status and any irregularity/deviations are reported and recorded in accordance with SOPs.
304.3	Coat pipe	304.3.1	Work area is isolated to enable repair to proceed in accordance with legislative requirements and SOPs.
		304.3.2	Coating material is obtained, prepared and handled in accordance with appropriate safety/hazard SOPs and manufacturer's specifications.
		304.3.3	Coating material is applied to pipeline in accordance with manufacturer's specifications and SOPs.
		304.3.4	New coating is tested to ensure that the application meets requirements.

Element		Performance criteria	
304.4	Inspect, notify completion of work	304.4.1	Cleaning of work site and disposal of waste materials is carried out in accordance with SOPs and legislative requirements.
		304.4.2	Piping system is returned to normal service in accordance with SOPs.
		304.4.3	Work completion, incidents and irregularities are notified in accordance with SOPs.

Range of Variables

Testing and application equipment may include abrasive blasting equipment; compressors; low voltage and high voltage holiday detectors; paint thickness coating gauges and meters; mobile plant; pipe wrapping machines; spray painting equipment; abrasive blast comparators and standards; densitometers; coating defect assessment survey equipment (DCVG method equipment, Pearson technique method equipment); hand/power tools; heating torch

Coatings may include heat shrink sleeves; wrapping tapes; epoxy paints; coating patches

Coating defect assessment surveys for identifying condition and location of irregularities may include DCVG method; Pearson technique method

MSDS information and handling of chemicals/flammable liquids are involved.

Evidence Guide

Critical aspects of evidence

Inspection of pipeline coatings; testing pipeline coatings; safe handling procedures for a range of dangerous and toxic chemicals and compounds; OH&S and environmental legislative requirements associated with the use, application and disposal of coating materials; coating defect assessment and application methods

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment.

Specialised resources required for training and assessment

Availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment; appropriate equipment for pipeline coating

Pre-requisites and co-requisite

This unit should be assessed in conjunction with or after competency has been demonstrated in Unit UTG NGS 010 A Apply Procedures in the Workplace, Unit UTG NGS 020 A Working With Others, Unit UTG NGS 030 A Plan and Organise Work Activities and UTG NGS 210 B Maintain Pipeline Easement.

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to comply with pipeline coating design principles; operate equipment and tools used in coating; test equipment procedures and operating parameters; use the various coating types and techniques; comply with OH&S and emergency principles and procedures; apply the basic electrical principles and measurements; use the various chemical types adhering to the appropriate safe handling procedures; apply topographic and geographic layout principles; comply with communication principles when providing; verbal, written; simple reports; forms and presentations; use computers and related technologies at a basic level; effectively analyse data

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	2
Collecting, analysing & organising information	1
Planning and organising activities	2
Working with others in a team	1
Using mathematical ideas and techniques	1
Solving problems	2
Using technology	1

UTG NGS305 A
Maintain Pipeline Easement

Descriptor: Maintain pipeline easements. Surveillance of the easement may be either aerial or on the ground to determine the condition of the easement and third party activity.

Element		Performance criteria	
305.1	Plan and prepare maintenance activity	305.1.1	Easement is inspected and assessed to determine the required maintenance activities.
		305.1.2	Assessment results are interpreted and reports/documents prepared outlining further action/s required.
		305.1.3	Topographical and geographical maps are interpreted to determine the selection of access and pipeline route.
		305.1.4	Equipment appropriate to the maintenance task is selected and operated in accordance with manufacturer's specifications.
305.2	Maintain pipeline easement and surrounding environment	305.2.1	Easement is maintained in accordance with environmental legislative requirements and SOPs.
		305.2.2	Work area is isolated to enable repair to proceed in accordance with legislative requirements and SOPs.
		305.2.3	The condition of signage/gates and easement ancillary equipment is monitored and logged.
		305.2.4	Remedial action is undertaken to ensure that signage is maintained in accordance with legislative requirements and SOPs.
305.3	Monitor civil activities	305.3.1	Civil works are monitored to ensure pipeline integrity and SOPs requirements are maintained and adhered to.
		305.3.2	Records are maintained in accordance with SOPs.

Element		Performance criteria	
305.4	Maintain liaison with third parties	305.4.1	Continuous liaison and contact is maintained with landowners and contractors associated with the pipeline system.
		305.4.2	Third parties are advised of intended activities by the issue of appropriate notices.
		305.4.3	Meetings are conducted with third parties to discuss notified issues.
		305.4.4	Meeting outcomes are recorded for actioning and future reference in accordance with legislative requirements and SOPs.

Range of Variables

Records/documentation may include OH&S and environmental legislative requirements; erosion control documentation; vegetation control documentation; workplace mapping eg. pipeline alignment drawings, topographical maps, geographical maps; pipeline access route manuals; MSDS Information; SOPs

Third parties may include landowners; local authorities; emergency services; other pipeline operators; producers, customers, shippers and vendors; Government agencies and departments; contractors

Civil activities may include laying of geotextile; gabion baskets; concreting; reseeding of environment; cased crossings; fauna and flora control

Reports may require the use of personal computers, other hardware media and associated software.

Evidence Guide

Critical aspects of evidence

Interpreting topographical and geographical maps; communicating effectively with third parties; OH&S and environmental legislative requirements; identifying and managing fauna and flora; applying control techniques and policies

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment. Assessment may be by day or night, in varied weather conditions, but must adhere to defined safety and regulatory guidelines.

Specialised resources required for training and assessment

Appropriate equipment required to maintain pipeline easement; availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit should be assessed in conjunction with or after competency has been demonstrated in Unit UTG NGS 001 A Apply Procedures in the Workplace, Unit UTG NGS 002 A Working With Others, Unit UTG NGS 003 A Plan and Organise Work Activities and Unit UTG NGS 304 A Coat Pipelines.

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to adhere to OH&S and environmental legislative requirements; apply and use vegetation control techniques; apply and use erosion control techniques; use appropriate pipeline signage; understand the operation capabilities and limitations of tools and equipment required in easement management; use equipment adhering to the required technical specifications of equipment; communicate effectively in broad range of situations; interpret and analyse data, and solve problems; interpret signage; operate a variety of equipment which may include both aerial and ground patrol equipment

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	2
Collecting, analysing & organising information	2
Planning and organising activities	2
Working with others in a team	2
Using mathematical ideas and techniques	1
Solving problems	2
Using technology	1

UTG NGS306 B
Co-ordinate Pipeline Repair and Modifications

Descriptor: Co-ordinate Pipeline Repair and Modifications.

Element		Performance criteria	
306.1	Prepare for co-ordination of repair and modification	306.1.1	Necessary plans, specifications and other relevant information are obtained and interpreted.
		306.1.2	Information concerning the identified repair/modification is conveyed to all parties concerned with the activity.
		306.1.3	All potential dangers and hazards are identified and confirmed with those persons undertaking the work, and control measures established.
		306.1.4	Work area is isolated to enable repair to proceed in accordance with legislative requirements and SOPs.
		306.1.5	Equipment and materials are organised and liaison undertaken with relevant personnel and services in order to establish pipeline system conditions and co-ordinate repair activities.
		306.1.6	Pipeline leaks are classified in accordance with SOPs.
306.2	Co-ordinate pipeline repairs or modification	306.2.1	Pipeline facility/equipment conditions and all environmental hazards are monitored to ensure their effect is limited or controlled so as not to adversely affect or restrict the type of work to be undertaken.
		306.2.2	Repair work is monitored to ensure activities are carried out in accordance with SOPs, permit to work, and that minimal impact occurs on existing operations and environment.
		306.2.3	Amendments or modifications are made and communicated to appropriate personnel as per SOPs.
		306.2.4	All required testing procedures are followed and requirements met to verify that the facilities/equipment have been made safe for work to commence.

Element		Performance criteria	
306.3	Re-establish pipeline to operational conditions	306.3.1	System is re-established in order to meet pipeline system operational requirements.
		306.3.2	Site is restored to meet environmental and operational requirements.
		306.3.3	Records and drawings are updated to reflect the repair/modification in accordance with SOPs.

Range of Variables

Inspection and testing techniques may include hydrostatic testing; magnetic particle inspection; radiography; ultrasonic inspection; dye penetrant inspection; gas leakage detection equipment

Leaks may be classified into Class 1 - repair until completed; Class 2 - repair within 7 days; Class 3 - monitor, repair not economic; Class 4 - no leak found

Repair and maintenance equipment may include oxy/acetylene cutting equipment; pipe cutters; cranes ; dogging and slinging activities; cold cutting equipment; linepipe and station pipe; screwed and welded fittings; flanges, gaskets and studs/nuts; hand and power tools; transport equipment

Repair/modification techniques may include hot tapping operations; hot tap and stoppling operations; pipe threading machinery; welding and cutting operations; gluing; fitting of pipeline repair sleeves and clamps; use of Lam Air Movers; use of pipe alignment clamps; use of Chiksans; fusion

Documentation/records may include SOPs; OH&S and environmental legislative requirements; pipeline alignment drawings; process & instrument drawings; workshop fabrication drawings; use of hand and power tools

Evidence Guide

Critical aspects of evidence

Pipeline inspecting and testing techniques; correctly interpreting pipeline drawings and plans; correctly diagnosing and assessing pipeline faults; preparing and planning for repairs; OH&S and environmental legislative requirements; completing the repair

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment.

Specialised resources required for training and assessment

Availability of accredited industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment; appropriate equipment required to co-ordinate pipeline repair and modification

Pre-requisites and co-requisite

This unit requires, as an entry, attainment of the Certificate II in Gas Operations and related units of competence.

Entry may also be accepted from those who have achieved an equivalent AQF level two-qualification competency outcome in an *allied industry*. As such, they would be expected to have attained sufficient relevant underpinning knowledge and skills which could be used to accelerate their progress through this unit to the Certificate III in Gas Operations. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

Additionally, this unit should be assessed in conjunction with or after competency has been demonstrated in Three of the following Units Unit NGS 190 Commission/Decommission Pipelines, Unit NGS 230 Launch and Recover PIG, Unit NGS 260 Perform Routine Maintenance on Pipeline, Facilities and Equipment, Unit NGS 280 Co-ordinate Repair of Pipeline, Facilities and Equipment, Unit NGS 290 Control Gas Odourisation and Unit NGS 320 Co-ordinate Construction, Laying and Testing of Gas Distribution Pipelines and the following Frontline Management III Competency Standards:

- (BSXFM 1301 A) Manage Personal Work Priorities and Professional Development,
- (BSXFM 1302 A) Provide Leadership in the Workplace,
- (BSXFM 1303 A) Establish and Manage Effective Workplace Relationships and
- (BSXFM 1308 A) Develop and Maintain a Safe Workplace and Environment

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to demonstrate an awareness of gas and its characteristics and properties; effectively operate tools and equipment within their capabilities and limitations; adhere to manufacturer's maintenance specifications; analyse and interpret test data; use test equipment; accurately interpret plans and drawings; communicate effectively with team members; accurately record and maintain relevant documentation and information

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	2
Collecting, analysing & organising information	2
Planning and organising activities	2
Working with others in a team	1
Using mathematical ideas and techniques	2
Solving problems	1
Using technology	1

UTG NGS307 B
Launch and Recover (PIG)

Descriptor: Launch and recover PIG.

Element		Performance criteria	
307.1	Prepare pipeline	307.1.1	PIG is prepared in accordance with manufacturer's specifications.
		307.1.2	Pipeline is prepared for "pigging" operation in accordance with legislative requirements and SOPs.
307.2	Launch, and receive PIG	307.2.1	Launching and receiving scraper barrels and intermediate site for launching and receiving operations are prepared in accordance with SOPs.
		307.2.2	PIG is operated in accordance with SOPs.
307.3	Interpret data/results	307.3.1	Inspection of the received PIG is undertaken to determine the wear sustained to the PIG material.
		307.3.2	Quantity and weight of waste material gathered during "pigging" operation is measured and a sample collected for analysis to determine pipeline conditions.
		307.3.3	Disposal of waste materials is carried out in accordance with SOPs.
		307.3.4	Data is recorded accurately to assist with assessment of pipeline condition.

Range of Variables

Equipment required for "pigging" operation may include valves; PIG launcher; PIG receiver; tracking equipment; pipeline locator; technical drawings; hand tools; crane; PIG signals; pilot tube; PPE; fire extinguisher; time piece

PIGs may include intelligent PIGS; batching PIGs; cleaning PIGs; foam PIGs; brush PIGs; disc PIGs; cup PIGs; spherical PIGs

Evidence Guide

Critical aspects of evidence

Use and operation of a variety of PIGs and "pigging" techniques; interpreting a range of data; waste management procedures; adhering to OH&S, SOPs, site specific safety and EPA legislative requirements

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment.

Specialised resources required for training and assessment

Appropriate equipment required to maintain integrity of pipeline systems; availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit requires, as an entry, attainment of the Certificate II in Gas Operations and related units of competence.

Entry may also be accepted from those who have achieved an equivalent AQF level two-qualification competency outcome in an *allied industry*. As such, they would be expected to have attained sufficient relevant underpinning knowledge and skills which could be used to accelerate their progress through this unit to the Certificate III in Gas Operations. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

Additionally, this unit should be assessed in conjunction with or after competency has been demonstrated in Three of the following Units: Unit UTG NGS 303 B Commission/Decommission Pipelines, Unit UTG NGS 306 B Co-ordinate Pipeline Repair and Modifications, Unit UTG NGS 310 B Perform Routine Maintenance on Pipeline, Facilities and Equipment, Unit UTG NGS 312 B Co-ordinate Repair of Pipeline, Facilities and Equipment, Unit UTG NGS 313 B Control Gas Odourisation, and Unit UTG NGS 316 B Co-ordinate Construction, Laying and Testing of Gas Distribution Pipelines and the following Frontline Management Level III Competency Standards:

- (BSXFM 1301 A) Manage Personal Work Priorities and Professional Development
- (BSXFM 1302 A) Provide Leadership in the Workplace
- (BSXFM 1303 A) Establish and Manage Effective Workplace Relationships and,
- (BSXFM 1308 A) Develop and Maintain a Safe Workplace and Environment

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to adhere to manufacturer's and legislative specifications and requirements; identify requirements for pipeline system set up; assemble and use the variety of PIGs; identify appropriate authorities to be advised; interpret and analyse data related to PIG process; use equipment for pigging operation in accordance with manufacturer's specifications and SOPs

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	2
Collecting, analysing & organising information	2
Planning and organising activities	2
Working with others in a team	2
Using mathematical ideas and techniques	1
Solving problems	2
Using technology	2

UTG NGS308 B
Maintain Cathodic Protection Systems

Descriptor: Maintain cathodic protection (CP) to prevent corrosion in steel pipelines.

Element		Performance criteria	
308.1	Monitor plan and prepare for maintenance activities	308.1.1	CP System is monitored in accordance with SOPs to ensure it is operating within the specifications of the relevant Australian Standard.
		308.1.2	Readings from CP monitoring equipment and galvanic anode beds are taken at regular intervals and data thus collected is interpreted.
		308.1.3	CP faults are identified and appropriate personnel are notified in accordance with SOPs.
		308.1.4	Records are maintained accurately in accordance with SOPs.
		308.1.5	Reports are compiled based on the collected data and are analysed to determine the system maintenance and operational adjustments so as to ensure system integrity.
308.2	Maintain and adjust equipment	308.2.1	CP system is maintained at maximum efficiency within design parameters.
		308.2.2	Equipment operating parameters are monitored to determine if the correct operating conditions of the equipment are being maintained.
		308.2.3	Data is collected and interpreted and maintenance requirements are determined.
		308.2.4	Regular checks are conducted to ensure that the integrity of the equipment is maintained and that results are recorded and any system abnormalities identified.
		308.2.5	Adjustments and maintenance are carried out to the equipment where abnormalities in the system have been identified.

Element		Performance Criteria	
308.3	Re-establish System	308.3.1	System is re-established in order to meet pipeline system operational requirements.
		308.3.2	Site is restored to meet environmental and operational requirements.
		308.3.3	Records and drawings are updated to reflect the repair/modification in accordance with SOPs.
		308.3.4	Incident records are maintained in accordance with SOPs.

Range of Variables

Types of CP faults may include coating damage/deterioration; interference from other systems; anode not working; equipment fault/failure

Applicable Australian Standards/legislation relevant to CP System may include OH&S legislation; utility codes and standards; AS 2885; AS 2430 - hazardous areas; AS 1768; AS 1596; AS 1697; AS 2832.1; AS 3000; AS 2239; AG 603

Location for maintaining CP Systems may be urban, country or remote. Third party monitoring.

Electrical equipment may include solar powered power generation systems; 240 volt power generation systems; insulation and monolithic joints; galvanic anode beds; battery banks – nicad and lead acid; transformer rectifiers and CPUs; lightning protection equipment; CP test points; Kirk cells

Types of checks and tests on CP systems may include on potential surveys; on/off potential surveys; coating defect assessment surveys (DCVG method, Pearson technique/method, over pipeline potential method); loop impedance testing; anode bed testing; soil resistivity testing; interference testing.

Test equipment may include reference half cells; multimeters; dataloggers; trycorders; syncorders; interruptors; CDA equipment; soil resistivity test equipment.

The use of personal computers, other hardware mediums and associated software may be required.

Evidence Guide

Critical aspects of evidence

Interpreting cathodic protection data system surveys and readings; locating and repairing faults; procedures for coating surveys; checking and maintaining potentials

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment.

Specialised resources required for training and assessment

Appropriate equipment required to maintain CP systems; availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit requires, as an entry, attainment of the Certificate II in Gas Operations and related units of competence.

Entry may also be accepted from those who have achieved an equivalent AQF level two-qualification competency outcome in an *allied industry*. As such, they would be expected to have attained sufficient relevant underpinning knowledge and skills which could be used to accelerate their progress through this unit to the Certificate III in Gas Operations. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

Additionally, this unit should be assessed in conjunction with or after competency has been demonstrated in UTG NGS 309 B Install Cathodic Protection Systems, the Electrotechnology Units UTE NES 204 Install Wiring Systems (Extra Low Voltage) and UTE NES 205 Install Electrical /Electronic Apparatus (Extra Low Voltage) and the following Frontline Management III Competency Standards:

- (BSXFM 1301 A) Manage Personal Work Priorities and Professional Development
- (BSXFM 1302 A) Provide Leadership in the Workplace
- (BSXFM 1303 A) Establish and Manage Effective Workplace Relationships and,
- (BSXFM 1308 A) Develop and Maintain a Safe Workplace and Environment

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to demonstrate an awareness of the corrosion process; use current technology to record, analysis and interpret data; interpret system design, planning and operation; use the CP System in relation to other services; undertake basic electrical measurement /adhere to electrical principles; demonstrate an understanding of coating requirements and their purpose; obtain relevant permits as required; adhere to OH&S and emergency procedures; select and use appropriate tools and equipment; understand and adhere to SOPs including recording and maintaining accurate records; interpret topographical and geographical maps

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	2
Collecting, analysing & organising information	2
Planning and organising activities	2
Working with others in a team	1
Using mathematical ideas and techniques	2
Solving problems	2
Using technology	2

UTG NGS309 B
Install Cathodic Protection Systems

Descriptor: Installation of cathodic protection (CP) to prevent corrosion in steel pipelines.

Element		Performance criteria	
309.1	Plan installation of CP system	309.1.1	CP system installation procedures are planned in accordance with appropriate Australian Standards.
		309.1.2	Data from completed surveys is analysed to determine system upgrades and modifications.
		309.1.3	Technical specifications and drawings are drafted from the analysed survey data.
		309.1.4	Liaison is maintained with representatives of other Utilities.
309.2	Install CP system	309.2.1	Approved specifications and drawings are reviewed, and required materials for manufacture are obtained, inspected and recorded.
		309.2.2	Identified materials and components are configured and tested as per the required design specifications.
		309.2.3	Any defects are rectified prior to the system/component being installed.
		309.2.4	CP systems and components are installed at identified location and tested prior to commissioning.
309.3	Test and commission CP system	309.3.1	Commissioning of the installed CP system and components is conducted.
		309.3.2	CP system is tested and further survey data collected to ensure system/component integrity has been achieved.
		309.3.3	Reports are compiled documenting the operation and performance of the installed CP systems/components.

Range of Variables

Applicable Australian Standards/legislation relevant to CP System may include OH&S legislation; utility codes and standards; safe working procedures and practices; AS 2885; AS 2430 - hazardous areas; AS 1768; AS 1596; AS 1697; AS 2832.1; AS 3000; AS 2239; AG 603

Location for maintaining CP Systems may be urban, country or remote. Monitor third party activities and installations.

Components and system may include solar powered power generation systems; 240 volt power generation systems; insulation and monolithic joints; galvanic anode beds; battery banks - acid and lead acid; transformer rectifiers and CPUs; lightning protection equipment; CP test points; Kirk cells.

Representatives in other utilities include other pipeline operators; electrical; rail; telecommunication

Types of checks and tests for CP systems may include on potential surveys; on/off potential surveys; coating defect assessment surveys (DCVG method, Pearson technique/method, over pipeline potential method); loop impedance testing; anode bed testing; soil resistivity testing; interference testing.

Test equipment may include reference half cells; multimeters; dataloggers; trycorders; syncorders; interruptors; CDA equipment; soil resistivity test equipment.

Drawings and specifications may include instrument electrical drawings; circuit diagrams; component charts; wiring diagrams; site layout drawings

The use of personal computers, other hardware mediums and associated software may be required.

Electrical equipment may include power and portable hand tools.

Evidence Guide

Critical aspects of evidence

Interpreting cathodic protection data system surveys and readings; implementing cathodic protection tests and surveys; locating and repairing faults; correct procedures for undertaking coating surveys; checking and maintaining potentials; install cathodic protection system

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment.

Specialised resources required for training and assessment

Installation of CP systems; appropriate equipment to install CP systems; availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit requires, as an entry, attainment of the Certificate II in Gas Operations and related units of competence.

Entry may also be accepted from those who have achieved an equivalent AQF level two-qualification competency outcome in an *allied industry*. As such, they would be expected to have attained sufficient relevant underpinning knowledge and skills, which could be used to accelerate their progress through this unit to the Certificate III in Gas Operations. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

Additionally, this unit should be assessed in conjunction with or after competency has been demonstrated in Unit UTG NGS 308 B Maintain Cathodic Protection System and Units from the following National Electrotechnology Industry Competency Standards:

- Unit UTE 99 NES 204 A - Install and Terminate Wiring Systems(Extra Low Voltage)
- Unit UTE 99 NES 205 A- Install Electrical /Electronic Apparatus(Extra Low Voltage)
- And Frontline Management III Competency Standards:
- (BSXFM 1301 A) Manage Personal Work Priorities and Professional Development
- (BSXFM 1302 A) Provide Leadership in the Workplace
- (BSXFM 1303 A) Establish and Manage Effective Workplace Relationships and,
- (BSXFM 1308 A) Develop and Maintain a Safe Workplace and Environment

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to demonstrate an awareness of the corrosion process; use current technology to record, analyse and interpret data; interpret system design, planning and operation; use the CP System and understand its relation to other utilities; undertake basic electrical measurement; demonstrate an understanding of coating requirements and their purpose; obtain relevant permit to work as required; adhere to electrical principles; select and use appropriate tools and equipment; understand and adhere to SOPs including recording and maintaining accurate records; adhere to OH&S and emergency procedures

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	2
Collecting, analysing & organising information	3
Planning and organising activities	2
Working with others in a team	1
Using mathematical ideas and techniques	3
Solving problems	3
Using technology	3

UTG NGS310 B
Perform Routine Maintenance of Pipeline, Facilities and Equipment

Descriptor: Perform minor maintenance of pipelines, facilities and equipment.

Element		Performance criteria	
310.1	Plan and Prepare for Minor maintenance	310.1.1	All necessary and appropriate facilities, tools, test and measurement instruments, materials and components to allow the completion of the work are selected and used.
		310.1.2	The facilities/equipment is made safe by ensuring it is safely isolated, depressurised, tagged and locked out and a permit to work is obtained as appropriate before allowing any repair or maintenance work to be undertaken.
		310.1.3	Equipment faults are identified through inspection and testing of the operational equipment in accordance with SOPs
		310.1.4	Fault-finding and troubleshooting techniques are applied to operational systems/equipment in order to identify any repairs or maintenance which may need to be undertaken.
310.2	Perform routine maintenance	310.2.1	Adjustments to calibration and test equipment and devices are made to ensure equipment and devices operate within specified ranges and to maintain correct flow parameters to ensure gas availability.
		310.2.2	All manufacturers' specifications and SOPs are strictly followed.
		310.2.3	All necessary and appropriate plans, drawings and text are selected and interpreted in order to carry out servicing of equipment.

Element		Performance criteria	
		310.2.4	Calibration of equipment is undertaken in accordance with manufacturer's specifications quality standards and SOPs.
		310.2.5	Work area is isolated to enable repair to proceed in accordance with OH&S and environmental legislative requirements and SOPs.
		310.2.6	Maintenance is performed in accordance with acceptable standards of cleanliness and with a minimum of waste and re-work.
310.3	Record and report results	310.3.1	Maintenance results are documented and recorded using appropriate SOPs and in accordance with relevant Australian Standards.
		310.3.2	Work completion is notified in accordance with SOPs.
		310.3.3	Where appropriate permit to work is cancelled and signed off at completion of repair.

Range of Variables

Equipment inspected and tested may include valves, actuators and flanges; heaters and heat exchangers; station power supplies; metering equipment; process control equipment; gas analysis equipment; piping systems; sumps and drains; pressure vessels/filtration equipment

Tools, Equipment and testing devices may include handtools; valves, actuators and flanges; heaters, and heat exchangers; metering equipment; control equipment; gas analysis equipment; piping systems; sumps and drains; measuring equipment

Types of faults may include gas leaks; electrical problems; compressor failure; pump failure; out of current inspection status; gauge failure; hose rupture/leaks; instruments out of calibration; non-flow of gas; instruments and equipment require cleaning; routine servicing is due; tight nuts, valve castings and fasteners

Documentation may include SOPs; manufacturer's specifications; OH&S Standards; statutory requirements; Australian standards; Codes of Practice; quality assurance requirements; permit to work/permit to enter

Reports may include routine inspections (daily readings, monthly checks); scheduled maintenance activities; mandatory inspections

Evidence Guide

Critical aspects of evidence

Inspecting and testing procedures; adjustment and replacement procedures; adhering to SOPs; OH&S legislative requirements; correctly diagnosing and assessing faults; applying correct maintenance procedures

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment.

Specialised resources required for training and assessment

Appropriate equipment to maintain pipeline facilities and equipment; availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit requires, as an entry, attainment of the Certificate II in Gas Operations and related units of competence.

Entry may also be accepted from those who have achieved an equivalent AQF level two-qualification competency outcome in an *allied industry*. As such, they would be expected to have attained sufficient relevant underpinning knowledge and skills which could be used to accelerate their progress through this unit to the Certificate III in Gas Operations. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

Additionally, this unit should be assessed in conjunction with or after competency has been demonstrated in three of the following Units: Unit UTG NGS 303 B Commission/Decommission Pipelines Unit UTG NGS 306 B Co-ordinate Pipeline Repair and Modifications, Unit UTG NGS 307 B Launch and Recover PIG, Unit UTG NGS 312 B Co-ordinate Repair of Pipeline, Facilities and Equipment, Unit UTG NGS 313 B Control Gas Odourisation, and Unit UTG NGS 316 B Co-ordinate Construction, Laying and Testing of Gas Distribution Pipelines and the following Frontline Management III Competency Standards:

- (BSXFM 1301 A) Manage Personal Work Priorities and Professional Development
- (BSXFM 1302 A) Provide Leadership in the Workplace
- (BSXFM 1303 A) Establish and Manage Effective Workplace Relationships and,
- (BSXFM 1308 A) Develop and Maintain a Safe Workplace and Environment

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to interpret technical drawings; understand the characteristics, operating capabilities and limitations of tools and equipment including prime movers, compression systems pumping and control systems, pipeline equipment; demonstrate an awareness of product characteristics and tolerances; use and interpret test equipment results; communicate effectively with team members; understand and adhere to SOPs including accurately reporting and documenting findings; understand permit to work systems; adhere to maintenance procedures; maintain appropriate reporting and recording systems; understand and adhere to SOPs and legislative requirements including OH&S requirements, Australian Standards, Codes of Practice, Quality Assurance requirements and manufacturers' specifications

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	1
Collecting, analysing & organising information	2
Planning and organising activities	2
Working with others in a team	2
Using mathematical ideas and techniques	2
Solving problems	3
Using technology	2

UTG NGS311 A
Operate and Monitor Pipeline Control Systems

Descriptor: Operate and monitor pipeline systems (including valve systems, instrument and control systems prime movers, compression systems)

Element		Performance criteria	
311.1	Prepare for operation	311.1.1	Operational area is checked to ensure that any potential hazards which may affect operation of the equipment is controlled or removed.
		311.1.2	Required safety checks and prestart checks are conducted to determine or verify the operational condition and parameters of the equipment.
		311.1.3	Tools, equipment and testing devices needed to carry out the work are obtained and checked for correct operation and safety.
		311.1.4	Status of the system is sought through communication with pipeline control centre personnel prior to commencing start up.
311.2	Operate and Monitor system	311.2.1	Systems are monitored and adjusted to allow for the most efficient operation in accordance with SOPs.
		311.2.2	Equipment faults are identified through inspection and testing of the operational equipment.
		311.2.3	Operating conditions of equipment are monitored through gauge levels, temperatures, flow indicators in order to determine performance of equipment and system.
		311.2.4	Fault-finding and troubleshooting techniques are applied to operational systems/equipment in order to identify any repairs or maintenance which may need to be undertaken.

Element		Performance criteria	
		311.2.5	Information concerning the operation of the pipeline system is monitored and conveyed to relevant personnel to ensure safe and efficient operation of the pipeline system.
		311.2.6	Emergency response is selected and applied in accordance with SOPs to control the situation and prevent further risk of personal injury, or of product, equipment or environmental damage.
		311.2.7	Reports are completed in accordance with SOPs.
311.3	Shutdown system/equipment	311.3.1	Emergency shutdown procedures are applied in the event of serious equipment failure or operational parameters being exceeded.
		311.3.2	Shutdown is completed in accordance with SOPs and operating conditions.
		311.3.3	Records/reports are maintained in accordance with SOPs.

Range of Variables

Pipeline Control Systems include Compressor systems and equipment (compressors, monitoring systems, power supply systems, pumps, coolers, scrubbers, expanders, anti surge systems, safety systems and compressor control systems)

Prime movers may include turbine engines, reciprocating engines, electric motors (fuel and carburation systems, ignition systems, lubrication systems, induction and exhaust systems, governing systems, power supply systems, safety and shutdown systems)

Instrument and control system, (flow control equipment, pressure and temperature transmitters and transducers, telemetry equipment, gas chromatographs, moisture analysers, gas sampling equipment, PLC's)

Valve system (non-control valves, control and shut off valves, non-return or check valves and pressure relief valves and manual hand operated actuator, gas/hydraulic actuator and pneumatic valves)

Emergency Responses include gas leaks and fire; equipment failure; hazards and incidents

Relevant personnel may include supervisors; maintenance personnel; organisation employees; contractors; government bodies

Tools, Equipment and testing devices include handtools; valves, actuators and flanges; heaters and heat exchangers; metering equipment; process control equipment; gas analysis equipment; piping systems; sumps and drains; pressure vessels/filtration equipment; prime movers; pumping systems and equipment; compression systems and equipment; PIG

Types of faults may include gas leaks; electrical problems; compressor or pump failure; out of current inspection status; gauge failure or hose rupture/leaks; instruments out of calibration; non-flow of gas; instruments and equipment require cleaning

Reports may include routine inspections (daily readings, monthly checks); scheduled maintenance activities; mandatory or statutory inspections; hazard and incident reports

Evidence Guide

Critical aspects of evidence

Reading, analysing and interpreting data; correctly diagnosing and assessing faults; correct use of testing and inspection equipment; accurate documentation of faults; application of emergency response systems; knowledge of permit to work system including types of permits and limitations; use of emergency equipment including fire fighting equipment

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment.

Specialised resources required for training and assessment

Availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and Co-requisite

This unit should be assessed after competency has been demonstrated in Unit UTG NGS 310 B Perform Routine Maintenance on Pipeline, Facilities and Equipment, Unit UTG NGS 312 B Co-ordinate Repair of Pipeline, Facilities and Equipment plus two of the following Units: Unit UTG NGS 303 B Commission/Decommission Pipelines, Unit UTG NGS 306 B Co-ordinate Pipeline Repair and Modifications, Unit UTG NGS 307 B Launch and Recover PIG, Unit UTG NGS 240 A Maintain Cathodic Protection System, Unit UTG NGS 309 B Install Cathodic Protection Systems, Unit UTG NGS 313 B Control Gas Odourisation and Unit UTG NGS 316 B Co-ordinate Construction, Laying and Testing of Gas Distribution Pipelines and the following Frontline Management III Competency Standards:

- (BSXFM 1301 A) Manage Personal Work Priorities and Professional Development
- (BSXFM 1302 A) Provide Leadership in the Workplace
- (BSXFM 1303 A) Establish and Manage Effective Workplace Relationships and,
- (BSXFM 1308 A) Develop and Maintain a Safe Workplace and Environment

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to perform piping/venting/purging and recommissioning of compressors; interpret technical drawings; demonstrate an awareness of compression flows and characteristics; understand the characteristics, operation capabilities and limitations of tools and equipment including prime movers, pumping and control systems, pipeline facilities and their equipment; adhere to and apply OH&S and EPA legislative requirements; demonstrate an awareness of product characteristics and tolerances; use and interpret test equipment results; communicate effectively with team members; understand and adhere to SOPs including accurately reporting and documenting findings; operate gas analysis equipment; understand the alarm and communications systems; operate systems such as pumps, compressors and valving, shutdown systems; carry out inspection test procedures; communicate effectively

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	2
Collecting, analysing & organising information	3
Planning and organising activities	2
Working with others in a team	2
Using mathematical ideas and techniques	1
Solving problems	2
Using technology	2

UTG NGS312 B
Co-ordinate Repair of Pipeline, Facilities and Equipment

Descriptor: Co-ordinate repairs of pipeline, facilities and equipment.

Element		Performance criteria	
312.1	Prepare for co-ordination of repair	312.1.1	All potential dangers and hazards are identified and confirmed with those persons undertaking the permitted work, and control measures established.
		312.1.2	The equipment is made safe by ensuring it is safely isolated, depressurised, tagged, locked out and permit to work is obtained as appropriate before allowing any repair or maintenance work to be undertaken.
312.2	Co-ordinate repair	312.2.1	Pipeline facility/equipment conditions and all environmental hazards are monitored to ensure their effect is limited or controlled so as not to adversely affect or restrict the type of work to be undertaken.
		312.2.2	Repair work is monitored to ensure activities are carried out in accordance with SOPs and that minimal impact occurs on existing operations and environment.
		312.2.3	Amendment or modifications are made and communicated to appropriate personnel as per SOPs.
		312.2.4	All required testing procedures are followed and requirements met to verify that the facilities/equipment have been made safe for work to commence.
312.3	Recommission systems and equipment	312.3.1	Repaired/installed equipment is brought back on line at the desired operational parameters and sequence.
		312.3.2	Systems are monitored or activated to ensure the systems are operating both safely and effectively.
		312.3.3	Where appropriate permit to work is cancelled and signed off at completion of repair.
		312.3.4	Reports are completed in accordance with SOPs.

Range of Variables

Types of faults may include gas leaks; electrical problems; compressor failure; pump failure; gauge failure; hose rupture/leaks; instruments out of calibration; non-flow of gas;

Facilities and Equipment to be repaired may include valves, actuators and flanges; heaters and heat exchangers; station power supplies; metering equipment; process control equipment; gas analysis equipment; piping systems; sumps and drains; pressure vessels/filtration equipment; prime movers; pumping systems and equipment ; compression systems and equipment

Documentation may include SOPs; manufacturer's specifications ; OH&S Standards; statutory requirements; Australian standards; Codes of Practice; quality assurance requirements; permit to work

Reports may include routine inspections (daily readings, monthly checks); scheduled maintenance activities; mandatory inspections

Record keeping may require the use of computers and or paper records.

Evidence Guide

Critical aspects of evidence

Identifying and analysing of faults; repairing faults; use testing and inspecting equipment; return to service testing; adhering to SOPs and legislative requirements

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment.

Specialised resources required for training and assessment

Appropriate equipment for diagnosing pipeline facilities and equipment faults; availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit requires, as an entry, attainment of the Certificate II in Gas Operations and related units of competence.

Entry may also be accepted from those who have achieved an equivalent AQF level two-qualification competency outcome in an *allied industry*. As such, they would be expected to have attained sufficient relevant underpinning knowledge and skills which could be used to accelerate their progress through this unit to the Certificate III in Gas Operations. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

Additionally, this unit should be assessed in conjunction with or after competency has been demonstrated in three of the following Units: Unit UTG NGS 303 B Commission/Decommission Pipelines, Unit UTG NGS 306 B Co-ordinate Pipeline Repair and Modifications, Unit UTG NGS 307 B Launch and Recover PIG, Unit UTG NGS 310 B Perform Routine Maintenance on Pipeline, Facilities and Equipment, Unit UTG NGS 313 B Control Gas Odourisation and Unit UTG NGS 316 B Co-ordinate Construction, Laying and Testing of Gas Distribution Pipelines and the following Frontline Management III Competency Standards:

- (BSXFM 1301 A) Manage Personal Work Priorities and Professional Development
- (BSXFM 1302 A) Provide Leadership in the Workplace
- (BSXFM 1303 A) Establish and Manage Effective Workplace Relationships and,
- (BSXFM 1308 A) Develop and Maintain a Safe Workplace and Environment

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to inspect, test and identify problems and faults to determine system faults; understand and apply SOPs, OH&S and environmental legislative requirements; select and use appropriate equipment; interpret technical drawings; use and interpret test equipment results; operate and maintain control systems and equipment; document findings accurately; communicate effectively

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	2
Collecting, analysing & organising information	2
Planning and organising activities	2
Working with others in a team	2
Using mathematical ideas and techniques	2
Solving problems	3
Using technology	1

UTG NGS313 B
Control Gas Odourisation

Descriptor: This unit describes the skills and knowledge required to odourise gas.

Element		Performance criteria	
313.1	Prepare to odourise gas	313.1.1	Equipment is checked in accordance with SOPs and manufacturer's specification to ensure it is operational.
		313.1.2	Records are maintained in accordance with SOPs.
313.2	Control Odourisation	313.2.1	The odour of the gas is maintained in accordance with SOPs and legislative requirements.
		313.2.2	Odourant is stored in accordance with SOPs and legislative requirements.
		313.2.3	Odourant is handled and/or transported in accordance with SOPs and legislative requirements.
		313.2.4	Waste products are handled and managed in accordance with SOPs and legislative requirements.
		313.2.5	Emergency shutdown procedures are applied in the event of serious equipment failure of operational parameters being exceeded.
313.3	Shutdown Odourisation Operations	313.3.1	Shutdown is completed in accordance with SOPs and operation conditions.
		313.3.2	Records/reports are maintained in accordance with SOPs.

Range of Variables

Tools and equipment to odourise gas may include odourmeter; tools such as lance, hoses, regulators; emergency response kit including absorption material; sodium hypochloriate (neutraliser); masking agent; reference standard; level indicator (magnetic detector); personal protective equipment; fire extinguishers; emergency container; transfer pump; molecular sieve for venting

Emergency response may include gas leaks and fire; equipment failure; hazards and incidents

Documentation may include SOPs; OH&S and environmental legislative requirements; manufacturer's specifications; Australian standards

Evidence Guide

Critical aspects of evidence

Operational safety; environmental and safety legislation; correct odourant levels; waste management procedures

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment. Assessment may be carried out by day or night, in varied weather conditions, but must adhere to defined safety and regulatory guidelines.

Specialised resources required for training and assessment

Appropriate tools and equipment for odourising gas; availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit requires, as an entry, attainment of the Certificate II in Gas Operations and related units of competence.

Entry may also be accepted from those who have achieved an equivalent AQF level two-qualification competency outcome in an *allied industry*. As such, they would be expected to have attained sufficient relevant underpinning knowledge and skills which could be used to accelerate their progress through this unit to the Certificate III in Gas Operations. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

Additionally, this unit should be assessed after competency has been demonstrated in three of the following Units: Unit UTG NGS 303 B Commission/Decommission Pipelines, Unit UTG NGS 306 B Co-ordinate Pipeline Repair and Modifications, Unit UTG NGS 307 B Launch and Recover PIG, Unit UTG NGS 310 B Perform Routine Maintenance on Pipeline, Facilities and Equipment, Unit UTG NGS 312 B Co-ordinate Repair of Pipeline, Facilities and Equipment and Unit UTG NGS 316 B Co-ordinate Construction, Laying and Testing of Gas Distribution Pipelines and the Frontline Management III Competency Standards:

- (BSXFM 1301 A) Manage Personal Work Priorities and Professional Development
- (BSXFM 1302 A) Provide Leadership in the Workplace
- (BSXFM 1303 A) Establish and Manage Effective Workplace Relationships and,
- (BSXFM 1308 A) Develop and Maintain a Safe Workplace and Environment

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to demonstrate knowledge of appropriate dosing levels; demonstrate knowledge of odourising system; operate equipment used to measure odourant levels; adhere to MSDS procedures; demonstrate knowledge of odourising agents; manage and dispose waste in accordance with SOPs, environmental and legislative requirements including emergency procedures; correctly and safely handle chemicals; accurately measure, fill and adjust odourant levels; understand and apply SOPs

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	1
Collecting, analysing & organising information	2
Planning and organising activities	1
Working with others in a team	1
Using mathematical ideas and techniques	1
Solving problems	2
Using technology	3

UTG NGS314 A
Control Pipeline Operations

Descriptor: This unit describes the skills and knowledge required to odourise gas.

Element		Performance criteria	
314.1	Plan control of operations	314.1.1	Resources to meet pipeline operations are determined in accordance with SOPs.
		314.1.2	Pipeline operations priorities are determined.
		314.1.3	Work schedules are adjusted in response to operational variations, unexpected events.
314.2	Control operations	314.2.1	Operating conditions, pressures and temperatures are monitored and observed to determine correct operating parameters of the pipeline are being maintained..
		314.2.2	Information concerning the operation of t he pipeline is monitored and conveyed to relevant personnel and other work areas to ensure safe and efficient operation of the pipeline system.
		314.2.3	Permit to work are authorised, recorded and monitored to allow activities to be undertaken or cancelled.
		314.2.4	Alarms and codes are correctly interpreted and acknowledged to ensure the correct response strategy is selected and applied to the situation.
		314.2.5	Emergency response is selected and applied in accordance with SOPs to control the situation and prevent further risk of personal injury, or of product, equipment or environmental damage.
		314.2.6	Reports are completed in accordance with SOPs.

Element		Performance criteria	
314.3	Shut down pipeline system	314.3.1	Emergency shutdown procedures are applied in the event of serious equipment failure or operational parameters being exceeded.
		314.3.2	Shutdown is completed in accordance with SOPs and operating conditions.
		314.3.3	Shift hand over procedures are performed in accordance with SOPs. Pre-shutdown checks are completed and documented in accordance with SOPs.
		314.3.4	Records/reports are maintained in accordance with SOPs.

Range of Variables

Resources to meet storage and/or processing operations and include appropriately experienced and qualified personnel; process control equipment; station power supply; heater and heat exchangers; station instrumentation; drawings and schematics; metering equipment and gas analysis equipment; valves, actuators and flanges; compressors and prime movers; sumps and drains; PIGs; personal protective equipment and clothing

Operational variations, unexpected events may include emergencies including gas leaks and fire; equipment failure; hazards and incidents; mandatory or statutory inspections; scheduled maintenance activities; electrical power failure

Monitoring of pipeline systems may include fire and gas extinguishing and deluge systems; emergency systems; alarm and communication systems; SCADA; prime movers and compression systems; shutdown systems

Relevant personnel may include supervisors; maintenance personnel; organisation employees; contractors; government bodies; landowners; producers, shippers, customers

Types of faults may include gas leaks; electrical problems; compressor or pump failure; out of current inspection status; gauge failure or hose rupture leaks; instruments out of calibration; non-flow of gas; instruments and equipment require cleaning

Reports may include Routine inspections (daily readings, monthly checks); scheduled maintenance activities; mandatory or statutory inspections; hazard and incident reports

Evidence Guide

Critical aspects of evidence

Applying emergency response systems; knowledge of permit to work system including types of permits and limitations; use of emergency equipment including fire fighting equipment; monitoring of product and safe fill levels are in accordance with SOPs; product is transferred in accordance with SOPs; storage processing conditions of product; accurate instruction to personnel

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment. Assessment may be carried out by day or night, in varied weather conditions, but must adhere to defined safety and regulatory guidelines.

Specialised resources required for training and assessment

Availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress

Pre-requisites and co-requisite

This unit should be assessed after competency has been demonstrated in Unit UTG NGS 306 B Co-ordinate Pipeline Repair and Modifications and three of the following units: Unit UTG NGS 303 B Commission/Decommission Pipelines, Unit UTG NGS 307 B Launch and Recover PIG, Unit UTG NGS 310 B Perform Routine Maintenance on Pipeline, Facilities and Equipment, Unit UTG NGS 313 B Control Gas Odourisation and Unit UTG NGS 316 B Co-ordinate Construction, Laying and Testing of Gas Distribution Pipelines and the Frontline Management III Competency Standards.

- (BSXFM 1301 A) Manage Personal Work Priorities and Professional Development
- (BSXFM 1302 A) Provide Leadership in the Workplace
- (BSXFM 1303 A) Establish and Manage Effective Workplace Relationships and,
- (BSXFM 1308 A) Develop and Maintain a Safe Workplace and Environment

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instrument/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit. An employee working at this level is required to:

Understand and apply SOPs; understand permit to work systems; understand architecture of the pipeline system; understand pipeline system operating parameters; understand the alarm and communications systems; adhere to OH&S and environmental legislative requirements including emergency procedures; operate systems such as pumps, compressors and valving, shutdown systems; carry out inspection test procedures; communicate effectively

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	2
Collecting, analysing & organising information	2
Planning and organising activities	3
Working with others in a team	3
Using mathematical ideas and techniques	2
Solving problems	2
Using technology	2

UTG NGS315 B
Repair Gas Meters

Descriptor: Maintain gas meters.

Element		Performance criteria	
315.1	Prepare for repair	315.1.1	Appropriate personnel are consulted to ensure the work is co-ordinated effectively with others involved on the work site.
		315.1.2	Materials necessary to complete the work are obtained in accordance with SOPs and checked against job requirements.
		315.1.3	Tools and equipment needed to carry out the work are obtained in accordance with SOPs and checked for correct operation and safety.
315.2	Repair meter	315.2.1	Meter is disassembled for inspection and serviced in accordance with SOPs.
		315.2.2	Meter faults are diagnosed using appropriate techniques in accordance with SOPs.
		315.2.3	Faulty components are repaired or replaced in accordance with manufacturer's specifications.
		315.2.4	Meters are reassembled, tested and calibrated in accordance with SOPs.
315.3	Compete the repair	315.3.1	Seals are affixed, meters painted and restored in accordance with SOPs.
		315.3.2	Meters are recorded and prepared ready for dispatch in accordance with enterprise requirements.
		315.3.3	Work completion details are finalised in accordance with SOPs.

Range of Variables

Types of meters may include diaphragm; turbine; rotary; orifice plate; vortex

Types of faults may include perished index rubbers; damaged indexes; loose or broken screws or stripped threads; faulty gaskets, gland packings, 'O' rings; broken tangents; loose bridges; binding diaphragms; faulty valve plates; bearing failures; faulty timing; dirty/damaged/broken impellers; damaged orifice plates; damaged rotors

Appropriate personnel may include managers; supervisors; maintenance personnel; company employees; contractors; government regulators; gas transportation personnel

Test on meters may include test on wet meter; test on bell prover; test on transfer prover; measurement of orifice diameter; spin test; calibration of pressure/temperature transducers

Documentation may include time sheets; job cards; plans and records; SOPs; manufacturer's specifications; test/calibration records; OH&S standards; statutory requirements; Australian standards; codes of practice; quality assurance requirements

Evidence Guide

Critical aspects of evidence

Identification and analysis of faults; repair and maintenance of faults; the use of test and inspection equipment; return to service testing; SOPs and legislative requirements

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment. Assessment may be carried out by day or night, in varied weather conditions, but must adhere to defined safety and regulatory guidelines.

Specialised resources required for training and assessment

Access to various types of meters; availability of suitably qualified industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit requires, as an entry, attainment of the Certificate II in Gas Operations and related units of competence.

Entry may also be accepted from those who have achieved an equivalent AQF level two-qualification competency outcome in an *allied industry*. As such, they would be expected to have attained sufficient relevant underpinning knowledge and skills which could be used to accelerate their progress through this unit to the Certificate III in Gas Operations. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

Additionally, this unit should be assessed in conjunction with or after competency has been demonstrated in the following Metal and Engineering Industry National Competency Standards:

- MEM 18.6A A Dismantle/repair/replace/assemble and fit engineering components,
- MEM 12.5B A Calibrating measuring equipment

and Frontline Management III Competency Standards:

- (BSXFM 1301 A) Manage Personal Work Priorities and Professional Development
- (BSXFM 1302 A) Provide Leadership in the Workplace
- (BSXFM 1303 A) Establish and Manage Effective Workplace Relationships and,
- (BSXFM 1308 A) Develop and Maintain a Safe Workplace and Environment

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to inspect, test and identify problems and faults in meters; understand and apply SOPs, OH&S and other legislative requirements; select and use appropriate meter testing equipment; use various paint spraying techniques; use and interpret test equipment results; operate and maintain gas meter computer testing equipment; document findings accurately

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	1
Collecting, analysing & organising information	1
Planning and organising activities	2
Working with others in a team	1
Using mathematical ideas and techniques	1
Solving problems	2
Using technology	1

UTG NGS316 B
Co-ordinate Construction, Laying and Testing of Gas Distribution Pipelines

Descriptor: Co-ordinate the construction, laying and testing of gas distribution pipelines and associated equipment.

Element		Performance criteria	
316.1	Plan and prepare to co-ordinate pipeline installation	316.1.1	Necessary plans, specifications, job requirements and other relevant information are identified.
		316.1.2	Alignment of gas main and associated equipment is confirmed and the location of other services is verified.
		316.1.3	Appropriate personnel are consulted to ensure the work plan is co-ordinated and programmed in consultation with others involved on the work site.
		316.1.4	Materials and resources necessary to complete the work are identified and ordered in accordance with SOPs and confirmed against job requirements.
		316.1.5	Tools and equipment needed to carry out the work are identified in accordance with SOPs.
		316.1.6	OH&S and environmental procedures for carrying out the work are identified and planned.
316.2	Co-ordinate construction, laying and insertion of pipelines and associated equipment	316.2.1	Pipeline construction is co-ordinated and monitored according to relevant SOPs and legislative requirements.
		316.2.2	Pipelines for renewal are correctly identified.
		316.2.3	Pipeline installation and/or insertion is co-ordinated and monitored in accordance with SOPs and legislative requirements.
		316.2.4	Monitor QA procedures are followed in accordance with SOPs.
		316.2.5	Unplanned events or conditions are responded to in accordance with SOPs.

Element		Performance criteria	
316.3	Test pipeline for conformance to specifications	316.3.1	Pipelines are pressure tested, cleaned and coated in accordance with SOPs and legislative requirements.
		316.3.2	Test results are recorded in accordance with SOPs and legislative requirements.
		316.3.3	Work completion is notified in accordance with SOPs.
316.4	Inspect and notify	316.4.1	Final inspections are undertaken to ensure the construction, laying and testing conforms to SOPs
		316.4.2	Notification that work schedule has been completed is undertaken in accordance with SOPs
		316.4.3	Work completion is notified in accordance with SOPs

Range of Variables

Other services may include water; electricity; telecommunication; sewerage and stormwater authorities; other pipeline authorities

Appropriate personnel may include site manager; maintenance personnel; project manager; engineers and technical officers; other personnel designated by the organisation

Materials required for pipeline installation may include various pipes (eg. p.v.c, nylon, pe, cast iron); fittings; coating material; bedding materials; detecta tape; trace wire; meters; valves; filters; regulators

Tools and equipment required for pipeline installation may include but is not limited to pneumatic tools and equipment; boring equipment; plastic fusion and solvent glue kits; welding plant equipment; various hand tools; trucks; slings; pressure testing equipment; compressors; generators; location equipment; electrofusion equipment; window cutter; steel plates; administrative equipment for documentation; lifting equipment; pigging equipment

Safe working procedures in SOPs may include wearing personal protective equipment; controlling traffic; controlling access to the site; ensuring trenches are correctly shored; using welding screens; the availability of correct fire extinguishers; enterprise procedures and practices; manufacturer's specifications

Standard operating procedures:

Formal arrangements of an organisation, enterprise or statutory authority of how work is to be done. This may include, for example:

Quality assurance systems incorporating, for example;

specifications, requirements and procedures; work orders/instructions; reporting procedures; improvement mechanisms; compliance requirements; safety management

Work clearance systems incorporating, for example;

work permits; monitoring and clearance procedures; isolation procedures

OH&S practices

Procedures for operating safety systems, operating plant and equipment and reporting work activities

Maintenance, modification or supply of relevant drawings and technical data

Arrangements for dealing with emergency situations

Legislative requirements may include OH&S; environmental; traffic control

Gas pipes are constructed and pressure tested in accordance with AG 603, AS 1697; AS 3723; AG 2885 and any other Australian or International Standard that may apply

Evidence Guide

Critical aspects of evidence

Other service locations; pipeline constructing; jointing procedures; coating procedures to protect against corrosion; pressure testing of pipelines; OH&S and environmental legislative requirements; correctly interpreting plans; data recording; coordinating the work of others; providing technical leadership

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment. Assessment may be carried out by day or night, in varied weather conditions, but must adhere to defined safety and regulatory guidelines.

Specialised resources required for training and assessment

Availability of appropriate equipment to construct and lay pipelines; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment

Pre-requisites and co-requisite

This unit requires, as an entry, attainment of the Certificate II in Gas Operations and related units of competence.

Entry may also be accepted from those who have achieved an equivalent AQF level two-qualification competency outcome in an *allied industry*. As such, they would be expected to have attained sufficient relevant underpinning knowledge and skills which could be used to accelerate their progress through this unit to the Certificate III in Gas Operations. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

Additionally, this unit should be assessed in conjunction with or after competency has been demonstrated in Unit UTG NGS 301 A Construct and Lay Pipelines and UTG NGS 302 A Prepare, Excavate and Reinstate Site and three of the following Units: UTG NGS 303 B Commission/Decommission Pipelines, UTG NGS 306 B Co-ordinate Pipeline Repair and Modifications, UTG NGS 307 B Launch and Recover PIG, UTG NGS 260 A Perform Routine Maintenance on Pipeline, Facilities and Equipment, UTG NGS 312 B Co-ordinate Repair of Pipeline, Facilities and Equipment, UTG NGS 313 B Control Gas Odourisation, UTG NGS 316 B Co-ordinate Construction, Laying and Testing of Gas Distribution Pipelines and the following Frontline Management III Competencies

- (BSXFM 1301 A) Manage Personal Work Priorities and Professional Development
- (BSXFM 1302 A) Provide Leadership in the Workplace
- (BSXFM 1303 A) Establish and Manage Effective Workplace Relationships and,
- (BSXFM 1308 A) Develop and Maintain a Safe Workplace and Environment

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by the unit.

An employee working at this level is required to select appropriate pipeline materials; adhere to Australian Standards; understand and confirm reticulation systems and use plans and specifications; understand the characteristics and operation capabilities and limitations of tools and equipment; operate tools and equipment within their capabilities and limitations; demonstrate an awareness of the various fittings required; document incident procedures including those required for fire safety & first aid; assess and prepare work site; effectively communicate information to members of the public, the team, and other parties such as communications, water and electricity suppliers; analyse information to solve problems; understand and adhere to OH&S and environmental legislative requirements; understand pressure characteristics, practices and procedures; co-ordinate the work of others; provide technical leadership and support

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Communicating ideas & information	2
Collecting, analysing & organising information	2
Planning and organising activities	2
Working with others in a team	2
Using mathematical ideas and techniques	2
Solving problems	2
Using technology	2

UTG NGS317 B
Use Plans, Drawings and Specifications

Descriptor: Use plans, drawings and specifications

Element		Performance criteria	
317.1	Identify types of drawings and their functions.	317.1.1	Main types of plans and drawings used in the gas industry are identified.
		317.1.2	Key functions of each type of drawing are identified.
		317.1.3	Key users of these drawings are identified.
317.2	Recognise commonly used symbols and abbreviations.	317.2.1	Commonly used symbols and abbreviations are recognised.
		317.2.2	Function of the legend is understood and explained.
317.3	Locate and identify key features on a site plan.	317.3.1	Key features and dimensions of the site are identified and located.
		317.3.2	Orientation of site is identified.
		317.3.3	Access from roadways to job-site is located and identified.
317.4	Identify and locate key features from sectional details and elevations.	317.4.1	Specific key features are identified correctly from sectional details and elevations.
		317.4.2	Structural features and horizontal and vertical measurements are located.
317.5	Recognise amendments	317.5.1	The panel is checked. Verify that drawing used is the latest amendment.
317.6	Use specifications.	317.6.1	Purpose of specifications is identified.
		317.6.2	Types of details are identified from specifications.

Range of Variables

Legislation includes relevant sections of Federal and State OH&S and Environmental Protection Acts.

Inspection of safety equipment is through visual and mechanical checks.

Types of drawings include Site plans; elevations; sectional plans/elevations; detailed and specification providing illustrations and dimensions.

Key features of site plans may involve shape and orientation of site; proposed building/s; roads; railways; easements; existing buildings/structures; services; dimensions; geographical features; powerlines/transmission lines and heritage/cultural features; service layouts and bore/casing details.

Key features of plans and elevations may involve type of structure: shape of structure/building; service requirements; location of plant/equipment; vertical and horizontal measurements; clearance distance; geological features; service layouts and bore/casing details.

Types of structures include buildings; bridges; fabricated towers; fences; wells; dams; poles; heritage/cultural features and environmental barriers

Services may include Drainage; sewerage; gas; water; electricity and telecommunications.

Types of details include but are not limited to bore and casing details; ground voltages; connection details; common trenching details/distances and conversions details.

Environmental features include but are not limited to fauna/flora habitats; cultural features; heritage features; water catchments.

Orientation of the site includes Relationship to 'North'; currency of plan and relationship between plan and site.

Evidence Guide

Critical aspects of evidence

Demonstrate an identification and understanding of various types of plans, drawings and specifications; identification of dimensions, symbols, abbreviations and key features; identification of title panel and reference date as up to date copies of the drawings; indicate a sound understanding of the purpose of specifications

Context of assessment

Assessment of competency including attainment of relevant knowledge and skills may be made through practical demonstration in an actual work environment or simulation of such an environment.

Specialised resources required for training and assessment

The following resources should be made available: suitable range of plans, drawings and specifications

Pre-requisites and co-requisites

This unit should be assessed in conjunction with or after competency has been demonstrated in Unit UTG NGS001 A, Apply Procedures in the Workplace, Unit UTG NGS002 A, Working with Others, Unit UTG NGS003 A, Plan and Organise Work Activities, Unit UTG NGS301 A, Construct and Lay Pipelines, Unit UTG NGS302 A, Prepare and Excavate Site and Unit UTG NGS318 A, Use and Maintain Small Plant, Equipment and Tools and Carry-out Minor Mechanical Maintenance.

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in the Gas Industry. This requires evidence of consistent achievement of the workplace outcomes covered by this Unit.

A range of drawings; materials relative to drawings/specifications; measurement and calculations; symbols, dimensions and terminology

Read and interpret plans, drawings and specifications; measure accurately and communicate effectively.

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Collecting, analysing and organising ideas and information	1
Communicating ideas and information	1
Planning and organising activities	1
Working with others and in teams	1
Solving problems	1
Using mathematical ideas and techniques	1

UTG NGS318 A
Use and Maintain Small Plant, Equipment and Tools and carry-out Minor Mechanical Maintenance

Descriptor: Use and maintenance of small plant, equipment and tools and the carrying-out of minor mechanical maintenance

Element		Performance criteria	
318.1	Identify plant/equipment and tools, their operations and safety requirements.	318.1.1	Types and function of plant/equipment and tools used in the gas industry are identified.
		318.1.2	Method of operation of plant/equipment and tools relative to manufacturers recommendations is identified and understood.
		318.1.3	OH&S requirements for guarding and cut off switches are identified.
		318.1.4	OH&S requirements for personal protective equipment associated with using machines is identified.
318.2	Select plant/equipment and tools.	318.2.1	OH&S requirements with the processes of operating and using plant/equipment and tools are recognised and adhered to.
		318.2.2	Appropriate personal protective equipment is selected, correctly fitted and used.
		318.2.3	Plant/equipment and tools are selected consistent with needs of job.
		318.2.4	Plant/equipment and tools are checked for serviceability/safety and faults are reported to supervisor.
318.3	Use plant/equipment and tools.	318.3.1	Plant/equipment and tools are safely and effectively used.
		318.3.2	Site hazards are identified in use of plant/equipment and tools and correct procedures are used to eliminate or minimise risk.
		318.3.3	Plant/equipment and tools are safely located when not in immediate use.
318.4	Clean up	318.4.1	Plant/equipment and tools are cleaned, maintained and stored.

Range of Variables

Legislation includes relevant sections of Federal and State OH&S and Environmental Protection Acts.

Inspection of safety equipment is through visual and mechanical checks.

Hand tools include but are not limited to adjustable spanners; crow bars and pinch bars; bolt cutters; brooms; chisels; hacksaws; hammers; measuring tapes; nips; picks and mattocks; pliers; sealant guns; shovels and spades; sledge hammers; spanners and wrenches; spirit levels; string lines; trowels and floats; wire cutters; screwdrivers; tube squeezers and benders

Power tools include drills; nail guns; staplers; screwdrivers; sanders; angle grinders; pneumatic tools and sand blasters

Power supply to include electricity; compressed air and generators

Plant and equipment includes but is not limited to air compressor and hoses; concrete mixer; industrial wet and dry vacuum cleaner; pallet trolley; rollers; compactors; pumps and hoses; brick/masonry saw; ladders; trestles and planks; wheelbarrows; LPG cylinders; traffic barriers; lighting; boring equipment; concrete cutters; trenching equipment; pneumatic hammers; leakage location equipment; cathodic protection equipment; pipe locators; fire fighting equipment; electrofusion equipment; welding equipment

Minor mechanical maintenance may include but is not limited to visual inspection; lubrication; gland nipping; draining of water taps; degreasing; replacing gaskets and limited mechanical assembly

Personal protective equipment may include overalls; boots; hard hat/cap; safety glasses/goggles; gloves; ear plugs/muffs; face masks/respirators; fire fighting protection; personal breathing apparatus

OH&S requirements are to be in accordance with state/territory legislatory regulations which may include workshops/worksite safety practices; control of noise and dust; use of ladders and working platforms; control of exhaust emission; isolation of work areas; confined space equipment and procedures; manual handling techniques; environmental requirements

Evidence Guide

Critical aspects of evidence

Demonstrate compliance with the Occupational Health and Safety and Environmental regulations applicable to workplace operations; indicate compliance with organisational policies and procedures including quality assurance requirements; correct procedures carried out priror to and during the application of processes; demonstrate safe and effective operational use of tools, plant and equipment; demonstrate and show understanding of manufacturer's specifications and recommendations; interactive communication with others to ensure safe and effective workplace operations

Pre-requisites and co-requisite

This unit should be assessed in conjunction with or after competency has been demonstrated in Unit UTG NGS001 A, Apply Procedures in the Workplace, Unit UTG NGS002 A, Working with Others, Unit UTG NGS003 A, Plan and Organise Work Activities, Unit UTG NGS301 A, Construct and Lay Pipelines, Unit UTG NGS302 A, Prepare and Excavate Site and Unit UTG NGS318 A, Use and Maintain Small Plant, Equipment and Tools and Carry-out Minor Mechanical Maintenance

Knowledge and Skills

The Evidence Guide is a set of guidelines which assist in the development of assessment instruments/tools to assess the competency of workers in Industry. This requires evidence of consistent achievement of the workplace outcomes covered by this Unit.

An employee working at this level is required to demonstrate a knowledge of workplace and equipment safety requirements; portable power tools applicable to the construction process; hand tools and a range of plant equipment; materials handling relative to plant and equipment use; workplace communication processes

An employee working at this level is required to demonstrate an ability to work safety to instructions; use power tools, hand tools, plant and equipment; communicate effectively face-to-face, in writing and electronically; select appropriate tools, plant and equipment

Key Competencies

Utilisation of the Key Competencies in the performance of this unit

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design)

Key Competency	Level
Collecting, analysing and organising ideas and information	1
Communicating ideas and information	1
Planning and organising activities	1
Working with others and in teams	1
Solving problems	1
Using mathematical ideas and techniques	1
Using technology	1

UTG NGS 319 A
Supervise Technical Operations for Gas Distribution/ Transmission

Descriptor: Technical supervision of maintenance, construction and gas system security operations.

Element		Performance criteria	
319.1	Plan and prepare to supervise operations	319.1.1	*Resources* are selected and secured for the proposed *project activities*.
		319.1.2	*Appropriate personnel* are inducted according to company standard operating procedures.
		319.1.3	*Project activities* are planned to prevent damage and ensure minimal disruption to the gas supply.
		319.1.4	*Relevant personnel* are consulted to secure approval for the *proposed activity*.
		319.1.5	*Relevant personnel* are consulted to ensure *appropriate personnel* comply with *legislative requirements* and *relevant documentation*.
		319.1.6	Expenditure is forecast and managed to keep within operational budget constraints.
319.2	Supervise during projects	319.2.1	*Relevant documentation* is checked for authorisation to permit project activities to be undertaken, cancelled or completed.
		319.2.2	*Appropriate personnel* are monitored and assessed for compliance with *relevant documentation* and *legislative requirements*.
		319.2.3	*Effective technical communication* is initiated and maintained with *appropriate personnel* during *project activities*.
		319.2.4	*Relevant personnel* are advised of non-compliance with *relevant documentation* and *legislative requirements*.
		319.2.5	*Project activities* are supervised/coordinated to achieve maximum safety, productivity and efficiency.

Element		Performance criteria	
		319.2.6	*Relevant personnel* are informed of project status/requirements according to company standard operating procedures.
319.3	Finalise completion details	319.3.1	*Project activities* are commissioned and work site restored to ensure all work carried out meets *relevant documentation* and *relevant authorities'* requirements.
		319.3.2	*Project activities* are reviewed with *relevant personnel* and *appropriate personnel* as a means to achieve continuous organisation improvement.
		319.3.3	*Relevant documentation* is finalised, and reviewed as a means to achieve continuous organisation improvement.
		319.3.4	*Records/reports* are maintained and processed with *relevant personnel* and in accordance with company standard operating procedures and *legislative requirements*.

Range of variables

Resources may include: appropriate personnel; relevant personnel; materials, tools and equipment etc; personal protective equipment and clothing; company standard operating procedures; equipment manuals; training resources.

Project activities include: maintenance, repairs and modifications; construction and upgrade; rectification of *gas system faults;* installation and commissioning of new plant, piping and/or equipment; system security; scheduling work

Appropriate personnel may include: organisation employees; contractors; maintenance personnel; appropriately experienced and qualified personnel; site security personnel

Relevant personnel may include: other supervisors; managers; inter-company departments; other utilities; consultants; council representatives; government bodies/agencies; producers; transporters; shippers; customers; land owners

Legislative requirements may include: Occupational Health & Safety legislation; government acts and regulations; Australian Standards and Codes of Practice; environmental legislative requirements

Relevant authorities may include: local & shire councils; local government authorities (eg CAA Fire etc); road transport authorities; rail department; landowners

Effective communication may include: verbal directions; *relevant documentation*; project *records/reports*

Types of gas system faults may include: gas leaks; electrical problems; mechanical failure; out of current inspection status; gauge failure, hose rupture/leaks; instruments out of calibration; non-flow of gas; cathodic protection system failure; corrosion; compressor breakdown; filtration problems; gas measurement equipment inaccuracy/failure

Relevant documentation may include: contracts; specifications; drawings/plans; 'as-constructed' drawings/plans; manufacturer's specifications; work permits; company standard operation and safety procedures; company management plans and policies; hot work permits; company forms and files; OH&S, laws and codes of practice; government legislation, acts and regulations; environmental legislative requirements; pipeline licenses; quality assurance; commercial agreements

Records/reports may include: relevant documentation; routine inspections (daily readings, monthly checks); scheduled maintenance activities; mandatory or statutory inspections; hazard and incident reports

Evidence guide

Critical aspects of evidence

These will include interpretation, application, and enforcement of relevant legislation; Australian Standards; codes of work practice and company standard operating procedures to ensure safety in gas storage/processing operations.

Authorise and process relevant documentation to permit activities to be undertaken, cancelled or completed.

Context of assessment:

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an on-the-job or off-the-job work environment or simulation of such an environment. Assessment may be carried out by day or night and in varied weather conditions, but must adhere to defined safety and regulatory guidelines.

Specialised resources required for training and assessment

Availability of accredited industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment assessment; other resource implications identified in the 'range of variables' guidelines.

Pre-requisites and co-requisites

There is no interdependency associated with this unit. However, this Unit has been designed as a natural progression from Unit UTG NGS 311 A, Operate and Monitor Pipelines Control Systems or Unit UTG NGS 314 A, Control Pipeline Operations. Therefore, it is expected that to achieve this Unit, without having gained competency in either Unit UTG NGS 311 A or Unit UTG NGS 314 A, will require that the relevant aspects of knowledge and skills related to Unit UTG NGS 311 A or Unit UTG NGS 314 A be developed and form part of the requirements for achieving competence in this Unit.

This Unit should be assessed in conjunction with or after competency has been demonstrated in Frontline Management Units BSXFM 1501 A, Manage Personal Work Priorities and Professional Development, BSXFM 1502 A, Provide Leadership in the Workplace, BSXFM 1503 A, Establish and Manage Effective Workplace Relationships, BSXFM 1504 A, Participate in, Lead and Facilitate Work Teams, BSXFM 1506 A, Manage Workplace Information, BSXFM 1508 A, Develop and Maintain a Safe Workplace and Environment, BSXFM 1509 A, Implement and Monitor Continuous Improvement Systems and Processes, BSXFM 1510 A, Facilitate and Capitalise on Change and Innovation and BSXFM 1511 A, Contribute to the Development of Workplace Learning and Gas Industry Unit UTG NGS 321 A, Risk Manage the Work Environment.

Knowledge and Skills

A knowledge of:

Industrial awards and employee entitlements; the characteristics of ethnic and cultural groups; the operating principles of the pipeline system; correct maintenance procedures; other service location methods; appropriate environmental requirements; company standard operating procedures, site specific safety legislation and safety requirements; emergency response systems; correct pressure adjusting techniques; correct procedures for identifying, diagnosing, assessing, analysing, locating, repairing and accurate documentation of faults; the use and operation of a variety of PIGs and ‘pigging’ techniques; correct waste management procedures; correct procedures for undertaking coating surveys; correct procedures for cathodic protection system installation, adjustment, replacement, checking and maintaining potential procedures; pipeline construction techniques and jointing procedures; pipeline inspecting and testing techniques; commissioning and decommission procedures; coating procedures to protect against corrosion;

The ability to:

coordinate the work of others; provide technical leadership and accurate instruction; communicate effectively; adhere to Occupational Health & Safety, environmental and legislative requirements; apply the permit to work system including types of permits and limitations; use emergency equipment including fire fighting equipment; correctly read and interpret plans, drawings etc; correctly read, analyse, interpret and record data; correctly use testing, inspection and gas analysis equipment; interpret cathodic protection data system surveys and readings; implement cathodic protection tests and surveys; interpret a range of 'pigging' data.

Key Competencies

Utilisation of the Key Competencies in the performance of this unit.

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design).

Key Competencies	Level
Communicating ideas & information	3
Collecting, analysing & organising information	3
Planning and organising activities	3
Working with others in a team	3
Using mathematical ideas and techniques	2
Solving problems	3
Using technology	3

UTG NGS 320 A
Supervise Technical Operations for Liquefied Petroleum Gas Storage and Processing

Descriptor: Technical supervision of Liquefied Petroleum Gas storage, processing and maintenance operations.

Element		Performance criteria	
320.1	Plan and prepare to supervise operations	320.1.1	*Resources* are selected and secured to undertake storage/processing operations.
		320.1.2	Storage/processing/maintenance priorities are determined according to *operational requirements*.
		320.1.3	*Activities* are scheduled/coordinated to optimise operations.
		320.1.4	*Relevant personnel* are consulted with and *relevant documentation* is initiated and authorised for the proposed *activities* to continue.
		320.1.5	Expenditure is forecast and managed to keep within operational budget constraints.
320.2	Supervise operations	320.2.1	*Relevant documentation* is authorised and processed to permit *activities* to be undertaken, cancelled or completed.
		320.2.2	*Appropriate personnel* are inducted according to company standard operating procedures.
		320.2.3	*Effective communication* is initiated and maintained with *appropriate personnel* during operational *activities*.
		320.2.4	*Appropriate personnel* are monitored and assessed for compliance with *relevant documentation* and *legislative requirements.*
		320.2.5	*Relevant personnel* are advised of non-compliance with *relevant documentation* and *legislative requirements.*
		320.2.6	*Activities* are supervised/coordinated to achieve maximum safety, productivity and efficiency.
		320.2.7	*Relevant personnel* are informed of operational status/requirements according to company standard operating procedures.

Element		Performance criteria	
320.3	Finalise completion details	320.3.1	*Activities* are completed in accordance with company standard operating procedures.
		320.3.2	*Activities* are reviewed with *relevant personnel* and *appropriate personnel* as a means to achieve continuous organisation improvement.
		320.3.3	*Relevant documentation* is finalised, and reviewed as a means to achieve continuous organisation improvement.
		320.3.4	*Records/reports* are maintained and processed with *relevant personnel* and in accordance with company standard operating procedures and *legislative requirements*.

Range of variables

Resources may include: *appropriate personnel; relevant personnel;* materials, tools and equipment etc; vessels, pumps; compressors, valves; product; personal protective equipment and clothing; control and monitoring equipment; mixing and sampling equipment; air equipment.

Activities may include: product receival, processing and/or dispatch; rectification of *gas system faults;* scheduling of maintenance, repairs and/or modifications; commissioning of new plant and/or equipment; standard operating and quality assurance procedures; stock control.

Appropriate personnel may include: appropriately experienced and qualified personnel; company employees; contractors; drivers; maintenance personnel; cleaners, grounds and site security personnel.

Relevant personnel may include: site manager; shift supervisors; inter-company departments; transporters/shippers; consultants; government bodies/agencies; refinery personnel; customers.

Monitoring of storage/processing facilities may include: pressure; temperature; volume; corrosion; liquid/vapour leaks; product levels; pressures; security.

Operational requirements may include: product levels; product blending/mixing/odourising; manufacturers maintenance requirements; rectification of *gas system faults.*

Effective communication may include: verbal directions; *relevant documentation; activity records/reports;* emergency response systems and procedures.

Types of gas system faults may include: liquid/vapour leaks; electrical problems; mechanical failure; over filled vessel; out of current inspection status; gauge failure; hose rupture/leaks; instruments out of calibration; non-flow of Liquefied Petroleum Gas; cathodic protection system failure; corrosion.

Relevant documentation may include: contracts; drawings/plans; manufacturer's specifications; company standard operation and safety procedures; work permits; confined space entry permits; hot work permits; company forms, *records/reports;* emergency plans; environmental requirements; quality assurance documentation.

Legislative requirements may include: Occupational Health &Safety legislation; government acts and regulations; Australian Standards and Codes of Practice; environmental legislative requirements.

Records/reports may include: *relevant documentation*; routine *inspect*ions (daily readings, weekly/monthly checks); product reconciliation; scheduled maintenance activities; mandatory or statutory *inspect*ions; safety; hazard and incident; product quality; transfer documentation; corrosion control.

Evidence guide

Critical aspects of evidence

Will include interpretation, application, and enforcement of relevant legislation; Australian Standards; codes of work practice and company standard operating procedures to ensure safety in gas storage/processing operations.

Authorise and process relevant documentation to permit activities to be undertaken, cancelled or completed.

Context of assessment:

Assessment of *competency*, including attainment of relevant knowledge and skills may be made through practical demonstration in an on-the-job or off-the-job work environment or simulation of such an environment. *Assessment* may be carried out by day or night and in varied weather conditions, but must adhere to defined safety and *regulatory guidelines*.

Specialised resources required for training and assessment

Availability of accredited industry assessors; system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment *assessment;* other resource implications identified in the 'range of variables' guidelines

Pre-requisites and co-requisites

There is no interdependency associated with this Unit. However, this Unit has been designed as a natural progression from Unit UTG NGS 211, Control LPG Storage/Processing Operations. Therefore, it is expected that to achieve this Unit, without having gained competence in Unit UTG NGS 211, will require that the relevant aspects of knowledge and skills related to Unit UTG NGS 211 be developed and form part of the requirements for achieving competence in this Unit.

This Unit should be assessed in conjunction with or after competency has been demonstrated in Frontline Management Units BSXFM 1501 A, Manage Personal Work Priorities and Professional Development, BSXFM 1502 A, Provide Leadership in the Workplace, BSXFM 1503 A, Establish and Manage Effective Workplace Relationships, BSXFM 1504 A, Participate in, Lead and Facilitate Work Teams, BSXFM 1506 A, Manage Workplace Information, BSXFM 1508 A, Develop and Maintain a Safe Workplace and Environment, BSXFM 1509 A, Implement and Monitor Continuous Improvement Systems and Processes, BSXFM 1510 A, Facilitate and Capitalise on Change and Innovation and BSXFM 1511 A, Contribute to the Development of Workplace Learning and Gas Industry Unit UTG NGS 330, Risk Manage the Work Environment.

Knowledge and skills

Knowledge of

industrial awards and employee entitlements; alarm, communications and emergency response systems; company standard operating procedures, site specific safety legislation and safety requirements; the properties of Liquefied Petroleum Gas; the operation of storage/processing facilities/equipment; correct odourant levels; the operation of pumps, compressors, valving, shutdown and deluge systems; correct vessel inspecting, testing techniques and coating procedures to protect against corrosion; correct procedures for undertaking coating surveys; correct procedures for cathodic protection system installation, adjustment, replacement, checking and maintaining potential procedures; correct waste management procedures.

Ability to:

coordinate the work of others; provide technical leadership and accurate instruction; communicate effectively; adhere to Occupational Health & Safety, environmental and legislative requirements; apply the ‘permit to work’ system including types of permits and limitations; use emergency equipment including fire fighting equipment; liquid product transfer (fiscal and internal); monitor, identify and rectify any problems associated with the storage/processing/transfer processes and procedures; metering and calibration procedures; correctly read, analyse, interpret and record data; correctly use testing, inspection and gas analysis equipment; correctly read and interpret plans, drawings etc; apply commissioning and decommission procedures; apply correct procedures for identifying, diagnosing, assessing, analysing, locating and repairing of faults; apply correct maintenance procedures; implement inspection, test and cathodic protection survey procedures.

Key Competencies

Utilisation of the Key Competencies in the performance of this unit.

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design).

Key Competencies	Level
Communicating ideas & information	3
Collecting, analysing & organising information	3
Planning and organising activities	3
Working with others in a team	3
Using mathematical ideas and techniques	2
Solving problems	3
Using technology	3

UTG NGS 321 A
Coordinate and Monitor Implementation of Risk Management Plan

Descriptor: Coordination and Monitoring of the implementation of the company risk management plan in the workplace.

Element		Performance criteria	
321.1	Plan to implement risk management plan	321.1.1	Appropriate *Risk Management Plan* and legislative requirements are identified to determine requirements for workplace.
		321.1.2	*Hazards* are identified and assessed according to *Risk Management Plan* to minimise the risk from workplace hazards.
		321.1.3	Workplac*e* is assessed for any potential *risks* according to *Risk Management Plan.*
		321.1.4	Identified *Risks* are rated and prioritised according to *Risk Management Plan.*
		321.1.5	Appropriate *control measures* are identified to suit the relevant workplace conditions according to *Risk Management Plan.*
		321.1.6	Relevant resources and materials are identified in accordance with requirements to support implementation of *control measures* and *Risk Management Plan*
321.2	Implement risk management plan	321.2.1	*Control measures* are implemented according to *Risk Management Plan*.
		321.2.2	Testing of *emergency appliances* and *safety devices* is organised, monitored and documented according to *Risk Management Plan*, and relevant *legislative requirements* to ensure high level responses to emergency situations.
		321.2.3	*Personnel* are organised, training arranged where appropriate, monitored and assessed for compliance with *Risk Management Plan.*
		321.2.4	*Personnel* selected are trained for *emergency exercises* to increase response times and knowledge of *hazards* and *control measures* according to *Risk Management Plan.*
		321.2.5	*Emergency exercises* are coordinated and monitored according to the *Risk Management Plan*.

Element		Performance criteria	
		321.2.6	Contingency plans for critical incidents are invoked in accordance with requirements where critical incidents of an abnormal nature are experienced
321.3	Review risk management plan	321.3.1	The *Risk Management Plan* and associated activities are reviewed and assessed for relevance and quality.
		321.3.2	Recommendations on *Risk Management Plan* are determined and *relevant documentation* completed and reported.

Range of variables

Hazards may include: confined spaces, electricity, gas, manual handling, noise, plant and equipment, infected blood, chemicals, temperature extremes, lighting, radiation,

Risks may include: injury, death or illness, damage to plant or equipment, financial loss, non-compliance with legislation (OH&S, environmental), damage to products

Risk management plans may include: identification of hazards, assessment of risks, identification of control measures, implementation of control measures and review of control measures, reference to conduct and reporting of hazard and operability studies (HAZOPS) and hazard analysis studies (HAZANS) for critical incidents, recognition of six categories of exposures (personal, property, financial, environmental, product and administrative); legislative compliance; workplace health & safety; standard operating procedures; vicarious liability; professional liability, reducing loss & exposure in the work environment from: personal loss- injury/common law, property loss - damage, financial - loss of income/theft, environmental liability, product - project work, administrative exposure, identification and use of Manufacturer's specifications and Australian/New Zealand and ISO Standards

Personnel may include: organisation employees; contractors; consultants; maintenance personnel; appropriately experienced and qualified personnel; drivers, cleaners, grounds and site security personnel.

Control measures may include: elimination of hazards, work procedures, Standard Operating Procedures, Personal Protective Equipment, fire safety, plant and equipment isolation, training of appropriate personnel, communications with appropriate personnel, supervision of appropriate personnel, maintenance of control measures,

Relevant personnel may include: managers; other supervisors; inter-company departments; other utilities; council representatives; producers, transporters/shippers; consultants; government bodies/agencies; refinery personnel; customers; land owners.

Legislative requirements may include: Occupational Health &Safety legislation; State's gas and petroleum acts and regulations; environmental/protection legislation; workers compensation legislation; Australian Dangerous Goods, employee code of conduct; anti discrimination legislation; equal employment opportunity legislation; disability legislation; trade practices legislation; Mabo legislation; Common Law

Emergency exercises may involve desktop and in-field simulation emergency exercises (involving fire; explosion; vapour/liquid leak; excavated/ruptured pipeline; LPG road/rail accidents; loss of supply), testing of contingency plans

Emergency appliances may include: emergency trucks/trailers; emergency plant (compressors, cranes, welding equipment etc); breathing apparatus; fire fighting equipment.

Safety devices may include: deluge systems; emergency stop devices, Personal Protective Equipment

Relevant documentation may include: Occupational Health & Safety consultation and reporting requirements; localised Occupational Health & Safety audits; injury reporting, claims management & rehabilitation; contractor control; purchasing control; plant & maintenance control; manual handling management; hazardous substance management; specific workplace issues.

Evidence guide

Critical aspects of evidence

These will include demonstrated competence to effectively implement the selected risk management plan including undertaking risk assessment, identifying hazards, eliminating hazards, implementing and reviewing control measures.

Identifying and carrying out emergency exercises for critical incidents including understanding of the use of HAZOPS and HAZANS.

Identifying contingency plans for critical incidents and testing those contingency plans.

Interpretation, application, and enforcement of relevant legislation; Australian/New Zealand and ISO Standards; codes of work practice and company standard operating procedures to ensure safety in operations.

Authorise and process relevant documentation to permit activities to be undertaken, cancelled or completed.

It is essential that the interactions between hazards, risks, communities and environments be fully identified and described. Evaluation of risk must be undertaken against established criteria in consultation with relevant communities.

Context of assessment:

Evidence of competence in this unit should be collected in one or more actual situations or scenarios where there is the capacity to demonstrate the required evidence in a real or simulated environment.

Assessment of *competency*, including attainment of relevant knowledge and skills may be made through practical demonstration in an on-the-job or off-the-job work environment or simulation of such an environment. *Assessment* may be carried out by day or night and in varied weather conditions, but must adhere to defined safety and *regulatory guidelines*.

Specialised resources required for training and assessment

For the demonstration of competence in this unit it will be necessary to provide a real life environment and/or simulations based on real life incidents. These resources may involve complex scenarios sufficient to allow evidence to be gathered from a variety of sources and stakeholders on more than one occasion and over an extended period of time. Controlled access to organisational records and personnel may have significant cost implications for the staging of scenarios.

Availability of accredited industry assessors; a system which facilitates recording of trainees' profiles and progress; facilities for workplace or simulated environment *assessment;* resource implications identified in the 'range of variables' guidelines.

Co-requisites

This Unit should be assessed in conjunction with or after competency has been demonstrated in Frontline Management Units BSXFM 1501 A, Manage Personal Work Priorities and Professional Development, BSXFM 1502 A, Provide Leadership in the Workplace, BSXFM 1503 A, Establish and Manage Effective Workplace Relationships, BSXFM 1504 A, Participate in, Lead and Facilitate Work Teams, BSXFM 1506 A, Manage Workplace Information, BSXFM 1508 A, Develop and Maintain a Safe Workplace and Environment, BSXFM 1509 A, Implement and Monitor Continuous Improvement Systems and Processes, BSXFM 1510 A, Facilitate and Capitalise on Change and Innovation, BSXF 1511 A, Contribute to the Development of Workplace Learning and either Gas Industry Unit UTG NGS 319 A, Supervise Technical Operations for Gas Distribution/Transmission or UTG NGS 320 A, Supervise Technical Operations for Liquefied Petroleum Gas Storage and Processing.

Knowledge and skills

Knowledge of:

Risk management and models; problems likely to preclude the implementation of intervention strategies; identification of potential hazards and their consequences including risk assessment; planning theory and processes and study of HAZOPS and HAZANS; legislative requirements; Australian/New Zealand and ISO Standards; codes of practice; problem solving and decision making techniques; emergency management concepts and principles; organisation policy and procedures; identification and implementation of control measures; emergency management concepts; principles and guidelines including critical incidents analysis

Ability to:

Identify hazards; analyse and prioritise risk; conduct needs analysis; define problems; identify stakeholders; negotiate with stakeholders; evaluate and prioritise risks under emergency conditions; use emergency risk modelling to estimate risk; define and anticipate implementation barriers; establish communication networks; negotiate with client groups and stakeholders; review guidelines, action plans and strategies for implementation; use information technologies to communicate information; resolve conflicts; conduct Reviews of risk management systems; coordinate and monitor emergency activities and presonnel: coordinate appliance tests.

Key Competencies

Utilisation of the Key Competencies in the performance of this unit.

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design).

Key Competencies	Level
Communicating ideas & information	2
Collecting, analysing & organising information	3
Planning and organising activities	3
Working with others in a team	3
Using mathematical ideas and techniques	2
Solving problems	2
Using technology	3

UTG NGS 601A
Plan and implement the data acquisition and metering requirements of a gas system

Descriptor: This Unit deals with the planning and commissioning of the data acquisition and metering requirements of a natural or liquefied petroleum gas system.

Element		Performance criteria	
601.1	Plan *data acquisition* and metering requirements of a gas system.	601.1.1	Properties and characteristics of the gas to be measured are identified
		601.1.2	System performance specifications are identified from *resources* and *relevant documentation*
		601.1.3	Design/capacity of gas system is identified
		601.1.4	Back-up systems are specified
		601.1.5	*Legislative requirements*, are identified
		601.1.6	Data storage and communication systems are specified
601.2	Determine specific equipment and maintenance requirements	601.2.1	Metering equipment is selected to meet performance specifications
		601.2.2	Metering units are optimally located in the system
		601.2.3	Maintenance activities are identified and scheduled
		601.2.4	Maintenance recording system is designed
		601.2.5	Standard Operating Procedures are developed
601.3	Commission data collection and metering system	601.3.1	Commissioning plan is developed
		601.3.2	Resources are obtained and scheduled according to the plan
		601.3.3	Company safety procedures are followed
		601.3.4	System is commissioned in accordance with the plan

Element		Performance criteria	
601.4	Assess performance of data collection and metering system	601.4.1	Data acquisition is reviewed to ensure system performance requirements are met
		601.4.2	Primary and back-up systems are reviewed to ensure performance requirements are met
		601.4.3	*Legislative* requirements are complied with
		601.4.4	System and Data security is assured
		601.4.5	Recording and reporting comply with company and *relevant authority* requirements
		601.4.6	Standard Operating Procedures are reviewed
		601.4.7	Outcomes of reviews are reported

Range of Variables

Gas Systems may include but not limited to:

Custody Transfer Stations, Tanker transfer, decantation, Tempered Liquid Petroleum systems, field or district regulators, LPG systems, meters and regulators, transmission and distribution systems

Data acquisition may include:

Temperature, pressure and flow rates from regulator or custody transfer stations, water bath heater operation (water temperature, pilot light and main burner operation), faulty equipment (over pressure and under pressure, slamshut operation and filter problems), pipeline ruptures, security system monitoring and pressure and volume data for "balancing the system"

Resources may include:

Relevant personnel, relevant authorities, company standard operating procedures, materials, equipment manuals/specifications, personal protective equipment, fire safety systems and training resources.

Legislative requirements may include:

Occupational Health & Safety legislation, government acts & regulations, Australian Standards & Codes of Practice, environmental legislative requirements.

Relevant authorities and other stakeholders may include:

Government authorities, landowners, stakeholders, local councils, fire authorities, other utilities

Relevant documentation may include:

Specifications, drawings/plans, manufacturers specifications, company standard operation and safety procedures, company management plans and policies, work permits, hot work permits, Company forms and files, acts and regulations, contracts, recording/reporting, maintenance activities, inspection/incident reports.

Evidence Guide

Critical aspects of evidence

These will include identification of gas characteristics and system performance specifications, data acquisition and management systems, selection of appropriate equipment, interpretation, application, and compliance of relevant legislation. Australian Standards Codes of work practice and company standard operating procedures to ensure safety of personnel and security of supply. Authorise and process relevant documentation to permit activities to be undertaken, cancelled or completed. Reviewing and reporting of completed work.

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an on-the-job or off-the-job work environment or simulation of such an environment. Assessment must adhere to defined safety and regulatory guidelines.

Pre-requisites

This unit requires, as an entry, attainment of either Certificate III in Gas Operations, Certificate IV in Gas Operations or Diploma of Gas Operations. Entry may also be accepted from those with relevant diplomas of engineering and/or science. As such they would be expected to have sufficient underpinning knowledge and skills in mathematics and science which should accelerate their progress through this unit which leads to the Advanced Diploma in Gas Systems. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

Knowledge and Skills

A knowledge of:

The chemical and physical characteristics of natural and liquefied petroleum gas, mathematical computations associated with gas storage, movement and metering, engineering principles and operating principles of the pipeline systems, appropriate environmental requirements, company standard operating procedures, site specific safety legislation and safety requirements, commissioning and decommissioning procedures, cathodic protection systems, industry awards and employee entitlements.

The ability to:

Coordinate the work of others, provide technical leadership and accurate instruction, communicate effectively, adhere to Occupational Health and Safety regulations, observe environmental and legislative requirements, apply the permit to work system including types of permits limitations, correctly read and interpret drawings and plans, correctly read, analyse, interpret and record data. Develop standard operating procedures, review and report on completed work.

Key Competencies

Utilisation of the Key Competencies in the performance of this unit.

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design).

Key Competency	Level
Communicating ideas & information	3
Collecting, analysing & organising information	3
Planning & organising activities	3
Working with others in a team	3
Using mathematical ideas & techniques	3
Solving problems	3
Using technology	3

UTG NGS 602A
Select and commission equipment to meet Pressure and Temperature control specifications

Descriptor: This unit deals with the selection and commissioning of equipment for Pressure and Temperature control in a natural gas or LPG system.

Element		Performance criteria	
602.1	Determine performance parameters for the system to be controlled	602.1.1	Properties and *gas characteristics* are identified.
		602.1.2	Relevant documentation, standards and legislative requirements are analysed
		602.1.3	Growth requirements are factored into the performance requirements
		602.1.4	Site requirements are identified
602.2	Plan and oversee the commissioning of the equipment	602.2.1	Equipment and materials are selected to meet performance, budgetary and OHS requirements
		602.2.2	A commissioning plan and testing criteria are developed and implemented
		602.2.3	All *relevant resources* are scheduled
		602.2.4	All relevant supply authorities and *Statutory bodies* are consulted and notified
		602.2.5	A performance monitoring plan is developed
		602.2.6	All *relevant documentation* is completed and authorised by the Relevant Authorities
602.3	Validate system performance	602.3.1	System performance is reviewed to ensure performance of the system is within specification
		602.3.2	System performance is reviewed to ensure balance is maintained with interconnected systems
		602.3.3	System performance is reviewed to ensure security of supply is within acceptable risk factors
		602.3.4	All reports and performance data are completed and lodged with the *relevant authorities*

Range of Variables

Gas Systems

Gas systems could include transmission and distribution pipelines, storage facilities, underground storage, LPG installations, tankers and storage facilities.

Gas Characteristics

Gas characteristics could include temperature, chemical composition, pressures and pressure reduction, reserve quantities and LPG evaporation rates.

Relevant resources may include:

Relevant personnel, materials and equipment, personal protective equipment, company standard operating procedures, equipment manuals, training resources.

Legislative requirements may include:

Occupational Health & Safety, government acts and regulations, Australian Standards & Codes of Practice, environmental legislative requirements,

Relevant authorities and other stakeholders may include:

Government authorities, landowners, stakeholders, local councils, fire authorities, other utilities, statutory bodies

Relevant documentation may include:

Contracts, specifications, drawings/plans, manufacturers specifications, work permits, company standard operation and safety procedures, company management plans and policies, company forms and files, laws and codes of practice.

Evidence Guide

Critical aspects of evidence

These will include the identification of gas system characteristics and future demands, resources requirements within budgetary restraints including maintenance costs, performance standards and security of supply, pressure and temperature control equipment, as well as interpretation and application of relevant legislation, Australian Standards, codes of work practice and company standard operating procedures to ensure safety, commissioning procedures, review and reporting.

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an on-the-job or off-the-job work environment or simulation of such an environment.

Pre-requisites

This unit requires, as an entry, attainment of either Certificate III in Gas Operations, Certificate IV in Gas Operations or Diploma of Gas Operations. Entry may also be accepted from those with relevant diplomas of engineering and/or science. As such they would be expected to have sufficient underpinning knowledge and skills in mathematics and science which should accelerate their progress through this unit which leads to the Advanced Diploma in Gas Systems. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

Knowledge and Skills

A knowledge of:

The operating principles of pressure and temperature control equipment and their performance characteristics, pipeline system, design requirements of a gas system, including the interdependence of associated systems, relevant mathematical calculations, relevant understanding of cathodic protection, project management and costing, appropriate environmental requirements, company standard operating procedures, site specific safety legislation.

The ability to:

Communicate effectively, calculate capacities, pressure and temperatures, interpret drawings, plans manufacturers specifications, analyse and interpret recorded data, review and report.

Key Competencies

Utilisation of the Key Competencies in the performance of this unit.

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design).

Key Competency	Level
Communicating ideas & information	3
Collecting, analysing & organising information	3
Planning & organising activities	3
Working with others in a team	3
Using mathematical ideas & techniques	3
Solving problems	3
Using technology	3

UTG NGS 603 A
Manage Workplace Risk

Descriptor: Manage risk management systems and practices in the workplace.

Element		Performance criteria	
603.1	Manage the identification and development of a risk management system(s) using risk management principles	603.1.1	*Risk management systems* are received and reviewed according to company policies, procedures and relevant documentation.
		603.1.2	Hazard risks are confirmed where applicable and *control measures* are approved for incorporation into the risk management plan
		603.1.3	Risk management plan is reviewed and approved using risk management principles
		603.1.4	*Risk management plan* is approved for implementation and maintenance according to company policies, procedures and relevant documentation
		603.1.5	*Appropriate personnel* are identified and approved for training in the Company's risk management policies, and procedures and advised of the relevant documentation that applies
603.2	Manage the minimisation of *risks* in the work environment for specific projects	603.2.1	Risk assessment is reviewed and documentation approved for proposed project(s)
		603.2.2	Risk management plan responsibilities are confirmed and managed for specific project activities to minimise risk
		603.2.3	Project schedule to establish time frame, work activities and procurement of materials is approved
		603.2.4	Procedures and work instructions are received and approved for project activities according to the risk management plan
		603.2.5	*Appropriate personnel* are evaluated and counseled, where appropriate, for compliance with company risk management policies, standard operating procedures and relevant documentation
		603.2.6	*Appropriate personnel* are assessed to ensure they comply to the company/site-specific procedures, health, safety and environmental requirements

Element		Performance criteria	
		603.2.7	Project compliance to risk management plan is evaluated and reported and, approved in accordance with company policies, procedures and relevant documentation processes
603.3	Manage and review critical incident contingency plans	603.3.1	Potential critical incidents reports are received for evaluation to determine appropriate remedial measures according to company policies, procedures and, relevant documentation processes are completed
		603.3.2	Contingency plans are reviewed and determined to deal with future potential critical incidents
		603.3.3	*Appropriate personnel* are authorised for training and, qualified to the type of *emergency exercises* required according to company policies, procedures and, relevant documentation processes are completed
		603.3.4	*Emergency* appliances are authorised for selection and secured appropriate to the type of emergency exercise required according to company policies and procedures
		603.3.5	*Emergency* appliances and *safety devices* are authorised for testing according to company standard operating policies and procedures, legislative requirements, and manufacturers specifications
		603.3.6	*Emergency exercises* are authorised and conducted according to developed contingency plans and monitored for performance and recorded accordingly
		603.3.7	*Emergency exercises* are reviewed and results incorporated in risk management plan
		603.3.8	Relevant documentation and records are amended or created and stored according to company policies, procedures and processes

Range of Variables

Risk management principles may include:

Six categories of exposures (personal, property, financial, environmental, product and administrative); legislative compliance; workplace health & safety; procedure systems; vicarious liability; professional liability.

Risk management plans may include:

Identification of hazards, assessment of risks, identification of control measures, implementation of control measures and review of control measures, reference to conduct and reporting of hazard and operability studies (HAZOPS) and hazard analysis studies (HAZANS) for critical incidents, recognition of six categories of exposures (personal, property, financial, environmental, product and administrative); legislative compliance; workplace health & safety; standard operating procedures; vicarious liability; professional liability, reducing loss & exposure in the work environment from: personal loss- injury/common law, property loss - damage, financial - loss of income/theft, environmental liability, product - project work, administrative exposure, identification and use of Manufacturer's specifications and Australian/New Zealand and ISO Standards, contingency plans for response to critical incidents.

Appropriate and relevant personnel may include:

Organisation employees; contractors; consultants; maintenance personnel; appropriately experienced and qualified personnel; drivers, cleaners, grounds and site security personnel, other managers; other supervisors; inter-company departments; other utilities; council representatives; producers, transporters/shippers; consultants; government bodies/agencies; refinery personnel; customers; land owners.

Authorisation may include:

Responsibility assigned for the application of relevant management practices to approve measures according to company polices, procedures and processes; legislative and/or regulatory requirements.

Risks may include:

Injury, death, illness, damage to plant/equipment, financial loss, non-compliance with legislation, damage to products.

Hazards may include:

Confined spaces, gas, electricity, manual handling, noise, plant & equipment, infected blood, chemicals, temperature, lighting, radiation.

Control measures may include:

Elimination of hazards, work procedures, Standard Operating Procedures, Personal Protective Equipment, fire safety, plant and equipment isolation, selection and/or training of appropriate personnel, communications with appropriate personnel, supervision of appropriate personnel, management of control measures

Relevant documentation may include:

Australian/New Zealand and ISO Standards; company risk management policy; codes of practice; standard operating procedures; Australian Dangerous Goods; trade practices; Occupational Health and Safety reporting requirements; injury reporting; claims management; contractor control; hazardous substances management.

Legislative requirements may include:

Occupational Health &Safety legislation; State or Territory gas and petroleum acts and regulations; environmental/protection legislation; workers compensation legislation; employee code of conduct; anti discrimination legislation; equal employment opportunity legislation; disability legislation; trade practices legislation; Mabo legislation; related regulations; common law.

Emergency exercises may involve:

Desktop and in-field simulation emergency exercises (involving fire; explosion; vapour/liquid leak; excavated/ruptured pipeline; LPG road/rail accidents; loss of supply); lost or unaccounted for personnel; medical emergencies.

Emergency appliances may include:

Emergency trucks/trailers; emergency plant (compressors, cranes, welding equipment etc); breathing apparatus; fire fighting equipment.

Contingency plans may include:

Emergency responses to a range of abnormal operating conditions; plans for responses to critical incidents; prioritisation of proposed responses.

Safety devices may include:

Deluge systems; emergency stop devices; Personal Protective Equipment.

Audit elements may include:

Occupational Health & Safety accountability and responsibility; Occupational Health & Safety consultation and reporting requirements; localised Occupational Health & Safety audits; Occupational Health & Safety inductions; emergency planning & procedures; injury reporting, claims management & rehabilitation; contractor control; purchasing control; plant & maintenance control; manual handling management; hazardous substance management; specific workplace issues.

Evidence Guide

Critical aspects of evidence

These will include demonstrated competence to effectively develop, implement and review the selected risk management system, including undertaking risk assessment, identifying hazards, eliminating hazards, implementing and reviewing control measures. Interpretation, application, and enforcement of relevant legislation; Australian Standards; codes of work practice and company standard operating procedures to ensure safety in operations. Identifying and carrying out emergency exercises for critical incidents including understanding of the use of HAZOPS and HAZANS. Identifying contingency plans for critical incidents and testing those contingency plans. Authorise and process relevant documentation to permit activities to be undertaken, cancelled or completed.

It is essential that the interactions between hazards, communities and environments be fully identified and described. Evaluation of risk must be undertaken against established criteria in consultation with relevant communities.

Context of assessment

Evidence of competence in this unit should be collected in one or more actual situations or scenarios where there is the capacity to demonstrate the required evidence in a real or simulated environment. Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an on-the-job or off-the-job work environment or simulation of such an environment

Pre-requisites

This unit requires, as an entry, attainment of either Certificate III in Gas Operations, Certificate IV in Gas Operations or Diploma of Gas Operations. Entry may also be accepted from those with relevant diplomas of engineering and/or science. As such they would be expected to have sufficient underpinning knowledge and skills in mathematics and science which should accelerate their progress through this unit which leads to the Advanced Diploma in Gas Systems. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

Knowledge of Skills

A knowledge of:

Risk management models; problems likely to preclude the implementation of intervention strategies; potential hazards and their consequences; planning theory and processes; benchmarking best practices in the implementation and review of risk management processes and study of HAZOPS and HAZANS; legislative requirements; Australian/New Zealand and ISO Standards; problem solving and decision making techniques; emergency management concepts and principles; techniques for the prioritisation and evaluation of risk management systems; organisation policy and procedures; emergency management concepts, principles and guidelines, management principles and practices.

Knowledge of the chemical and physical behaviour of natural and liquefied petroleum gas, including hazards in production, storage, handling, transport, transmission and distribution.

The ability to:

Analyse hazards; analyse and prioritise risk; conduct skills needs analysis; define problems; identify stakeholders; negotiate with stakeholders; apply risk management principles; use emergency risk modelling processes to estimate risk; define and anticipate implementation barriers; establish communication networks; negotiate with client groups and stakeholders; review guidelines, action plans and strategies for implementation; use information technologies to communicate information technologies to communicate information; resolve conflicts; conduct reviews of risk management systems; coordinate and monitor emergency activities and personnel; coordinate and monitor appliance tests, manage personnel and resources.

Key Competencies

Utilisation of the Key Competencies in the performance of this unit.

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design).

Key Competencies	Level
Communicating ideas & information	3
Collecting, analysing & organising information	3
Planning and organising activities	3
Working with others in a team	3
Using mathematical ideas and techniques	3
Solving problems	3
Using technology	3

UTG NGS 604A
Manage gas system environmental compliance

Descriptor: This Unit covers the competency to ensure that all gas installations and assets comply with legal, environmental, occupational health and safety and community standards

Element		Performance criteria	
604.1	Identify and document environmental issues for a proposed gas system	604.1.1	Legislative compliance requirements are identified.
		604.1.2	Relevant standards, Codes of Practice and Organisational Operating Procedures are interpreted and likely issues documented.
		604.1.3	Impact assessments are conducted or arranged as appropriate.
		604.1.4	Existing neighbouring installations are assessed for their likely impact on the gas system.
		604.1.5	Land ownership issues are identified, including acquisition, compensation and easement requirements.
604.2	Facilitate negotiations for compliance with all Regulations, Standards and Codes of Practice	604.2.1	All internal and external stakeholders are identified.
		604.2.2	Relevant and qualified personnel are consulted on compliance needs.
		604.2.3	Legislative compliances are documented for each authority.
		604.2.4	Negotiations are facilitated and documented in accordance with company polices, procedures and processes.
604.3	Review environmental and safety management plans for a gas system	604.3.1	Environmental and safety risks and their likely impacts for a gas system on the installation assets and to communities are identified and analysed to determine control options.
		604.3.2	Options for addressing potential impacts are identified, proposed and costed.
		604.3.3	Requisite environmental and safety management strategies are determined and recommendations made according to company policies, procedures and processes.

Element	Performance criteria
	604.3.4 Environmental and safety management plans are reviewed and modifications are negotiated with internal and external stakeholders according to company policies, procedures and processes.
	604.3.5 Outcomes are recorded and documented according to company policies, procedures and processes.

Range of Variables

Gas Systems may include:

Natural gas transmission, distribution and storage; liquefied petroleum gas tanker and ship transport, storage and processing terminals and distribution systems

Legislative compliance may include:

Occupational Health & Safety legislation; government acts and regulations; Australian Standards and Codes of Practice; environmental legislative requirements

Environmental issues may include:

Political, legal, community and aesthetic impact of installations

Safety issues may include:

Occupational health and safety of operatives, ongoing maintenance of facilities: emergency plans, safety cases and environmental impact assessments

Relevant personnel may include:

Managers; other supervisors; inter-company departments; other utilities; council representatives; producers, transporters/shippers; consultants; government bodies/agencies; refinery personnel; customers; land owners

Relevant authorities and other stakeholders may include:

Government authorities, land owners both current and traditional, local councils, land management groups, other utilities, in-house quality control groups and management

Evidence Guide

Critical aspects of evidence

These will include application of environmental management principles to the gas system; identification of gas system their potential hazards and their control strategies; interpretation, application, and compliance of relevant legislation and related regulations; Australian Standards; codes of work practice and company standard operating procedures; environmental and safety management plans to ensure safety in gas storage/processing operations; authorisation and process requirements for relevant documentation to permit activities to be undertaken, cancelled or completed; relevant negotiation and communications skills associated with gas systems compliance, acquisition, compensation and easement requirements

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an on-the-job or off-the-job work environment or simulation of such an environment. Assessment may be carried out by day or night and in varied weather conditions, but must adhere to defined safety and regulatory guidelines.

Pre-requisites

This unit requires, as an entry, attainment of either Certificate III in Gas Operations, Certificate IV in Gas Operations or Diploma of Gas Operations. Entry may also be accepted from those with relevant diplomas of engineering and/or science. As such they would be expected to have sufficient underpinning knowledge and skills in mathematics and science which should accelerate their progress through this unit which leads to the Advanced Diploma in Gas Systems. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

Knowledge and Skills

A knowledge of:

Relevant authorities and their compliance requirements; awareness of cultural and community standards and sensitivities, sacred sites; the purpose and form of environmental and safety management plans; the impact of gas installations on the environment; operating and maintenance principles of gas system; relevant understanding of chemistry; transportation of both LPG and natural gas; company standard operating procedures; site specific safety legislation and safety requirements; emergency response systems; risk management strategies; types of work permits and their applications.

Knowledge of the chemical and physical behaviour of natural and liquefied petroleum gas, including hazards in production, storage, handling, transport, transmission and distribution.

The ability to:

Manage sensitive negotiations and communicate with diverse groups of stakeholders, adhere to legislative requirements, interpret and use drawings and plans, coordinate and manage work groups including specialist consultants, convene and manage meetings and prepare reports and submissions.

Key Competencies

Utilisation of the Key Competencies in the performance of this unit.

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design).

Key Competencies	Level
Communicating ideas & information	3
Collecting, analysing & organising information	3
Planning and organising activities	3
Working with others in a team	3
Using mathematical ideas and techniques	3
Solving problems	3
Using technology	3

UTG NGS 605A
Prepare design specifications for a gas system

Descriptor: This Unit covers the competency to identify systems design specifications based on the required performance criteria for a gas system/installation, covering natural or liquefied petroleum gas.

Element		Performance criteria	
605.1.	Prepare input and output performance criteria for the system	605.1.1	Relevant personnel are consulted and relevant documentation are identified
		605.1.2	Proposed system usage is analysed
		605.1.3	Technical requirements of the system are investigated
		605.1.4	Environmental hazards are identified
		605.1.5	Legislative compliance requirements are identified
605.2	Assess the impact of the system on the external environment	605.2.1	Relevant authorities and stakeholders are identified and consulted
		605.2.2	Environmental impact literature is analysed
		605.2.3	System logistics are determined
		605.2.4	Impact on interconnected systems is assessed
		605.2.5	Negotiation with stakeholders are planned
		605.2.6	Unresolved issues are identified
605.3	Identify options for the system	605.3.1	Engineering options are prepared
		605.3.2	Design and construction resources are identified
		605.3.3	Availability and price is determined
		605.3.4	Maintenance requirements are documented
		605.3.5	Cost/benefit analyses are prepared
605.4	Evaluate options and prepare specifications	605.4.1	Evaluation criteria is determined
		605.4.2	Specifications are consistent with system performance criteria
		605.4.3	Any shortfalls in recommended option are justified
		605.4.4	All compliance requirements are met

Range of Variables

Gas systems could include:

One of LPG or natural gas systems may dominate, however it is expected that systems will be selected across both, and include transmission and distribution pipelines, LPG storage facilities greater than 50kL, underground storage, tankers and ships, control systems, custody transfer stations, odorising plant, corrosion control, interconnecting systems.

Environmental hazards may include hazards associated with LPG or natural gas, geological features, soil types, neighbouring plants, residential areas, separation distances and emission and contamination hazards.

System logistics could include land and sea transport routes and equipment, transmission and distribution pipelines, land ownership and easements, siting.

Resources may include:

Appropriate personnel; relevant personnel; materials, tools and equipment etc; personal protective equipment and clothing; company standard operating procedures; equipment manuals; training resources.

Relevant personnel may include:

Company planners and marketers, department heads, business unit managers, company engineers and consultant engineers, technical specialists, statutory authorities and environmental specialists.

Legislative requirements may include:

Occupational Health & Safety legislation; government acts and regulations; Australian Standards and Codes of Practice; environmental legislative requirements, local government traffic management.

Relevant authorities may include:

Local & shire councils; local government authorities; emergency services; road transport authorities; rail department; landowners.

Relevant documentation may include:

Contracts; specifications; drawings/plans; ‘as-constructed’ drawings/plans; manufacturer’s specifications; work permits; company standard operation and safety procedures; company management plans and policies; hot work permits; company forms and files; OH&S, laws and codes of practice; government legislation, acts and regulations; environmental legislative requirements; pipeline licenses; quality assurance; commercial agreements.

Evidence Guide

Critical aspects of evidence

These will include identification of environmental hazards and their control options, conduct of cost/benefit analyses, identification of system performance characteristics, interpretation, application, and compliance of relevant legislation; Australian Standards; codes of work practice and company standard operating procedures to ensure safety in gas storage/processing operations.

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through submission of recently completed projects: ability to interpret plans and drawings and the convening and management of consultative groups/committees.

Pre-requisites

This unit requires, as an entry, attainment of either Certificate III in Gas Operations, Certificate IV in Gas Operations or Diploma of Gas Operations. Entry may also be accepted from those with relevant diplomas of engineering and/or science. As such they would be expected to have sufficient underpinning knowledge and skills in mathematics and science which should accelerate their progress through this unit which leads to the Advanced Diploma in Gas Systems. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

It is also recommended that assessment of competency in this unit is conducted in conjunction with assessment of the Unit UTG NGS 603A, Manage Workplace Risk.

Knowledge of Skills

A knowledge of:

The operating principles of the pipeline system; transportation of both LPG and natural gas; storage facility design and construction; mathematical calculations for storage, pressure/temperature control, metering, capacities and design specifications; contractual requirements; other service location methods; appropriate environmental requirements; company standard operating procedures; site specific safety legislation and safety requirements; project management; emergency response systems; broad perspective of design life maintenance requirements, construction materials and their properties and limitations.

The ability to:

Coordinate the work of others; provide technical leadership and accurate instruction; facilitate contracts and employment; communicate effectively; adhere to occupational health and safety , environmental and legislative requirements; calculate capacities, metering data and pressure ratings; apply the permit to work system including types of permits and limitations; correctly read and interpret plans and drawings; correctly read, analyse, interpret and record data; consult with relevant authorities.

Key Competencies

Utilisation of the Key Competencies in the performance of this unit.
Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design).

Key Competencies	Level
Communicating ideas & information	3
Collecting, analysing & organising information	3
Planning and organising activities	3
Working with others in a team	3
Using mathematical ideas and techniques	3
Solving problems	3
Using technology	3

UTG NGS 606A
Manage gas systems projects

Descriptor: This Unit covers the competency required to oversee the management of major construction or maintenance activities in either natural gas or LPG systems.

Element		Performance criteria	
606.1	Prepare project Plan	606.1.1	Relevant documentation is analysed
		606.1.2	Legislative and company compliance requirements and key stakeholders are identified
		606.1.3	Resources are identified
		606.1.4	Tender documents and project scope are prepared and tenders called for in accordance with company policy and procedure
		606.1.5	Performance measures are developed
		606.1.5	A project management plan is developed
606.2	Implement and manage project plan	606.2.1	Project schedule and project administration plan is developed to meet the organisation's expectations
		606.2.2	Communication strategy with contractors, company representatives and technical experts is developed and implemented
		606.2.3	Applications for work permits, access permits and licences are prepared and submitted to authorities/ stakeholders for approval
		606.2.4	Resources are acquired and administered in accordance with the project plan
		606.2.5	Contractors are selected and managed in accordance with the project plan and organisational requirements
		606.2.6	Project variations are negotiated with all stakeholders
		606.2.7	Progress reports are prepared and presented to management with explanations for delays and over-runs
		606.2.8	Performance measures of time, quality of work, technical standards and cost are monitored

Element		Performance criteria	
606.3	Finalise and hand over the project	606.3.1	Remedial work is identified, scheduled and completed
		606.3.2	Contracts are completed and signed off
		606.3.3	System performance is reviewed to ensure specifications and performance measures are met
		606.3.5	Project documentation is completed in accordance with organisational needs
		606.3.4	All project tasks are completed

Range of Variables

Resources may include:

Relevant personnel; materials, tools and equipment etc; personal protective equipment and clothing; company standard operating procedures; equipment manuals, training resources.

Project activities include:

Major construction and maintenance activities in either the LPG or natural gas sector, including installations, transmission and distribution pipelines, LPG storage facilities greater than 50kL, underground storage, tankers and ships, control systems, custody transfer stations, odorising plant, corrosion control, interconnecting systems.

Appropriate personnel may include:

Organisation employees; maintenance personnel; appropriately experienced and qualified personnel; site security personnel, contractors and their employees, inspectors and regulatory authority representatives.

Legislative and company requirements may include:

Occupational Health & Safety legislation; government acts and regulations; Australian Standards and Codes of Practice; environmental legislative requirements, company Standard Operating Procedures and authorisation requirements and technical standards requirements

Relevant authorities and other stakeholders may include:

authorities, local councils; emergency services; road and rail transport authorities;

government department; land owners, contractors and other organisational personnel

Communication strategy may include:

Verbal directions; relevant documentation; project records/reports, electronic communications, internet communication.

Relevant documentation may include:

Specifications; drawings/plans; 'as-constructed' drawings/plans; manufacturer's specifications; work permits; company standard operation and safety procedures; company management plans and policies; hot work permits; company forms and files; OH&S, laws and codes of practice; government legislation, acts and regulations; environmental legislative requirements; quality assurance; expenditure reports and budgets.

Records/reports may include:

Relevant documentation; routine inspections (daily readings, monthly checks); scheduled maintenance activities; mandatory or statutory inspections; hazard and incident reports.

Evidence Guide

Critical aspects of evidence

These will include time and resource management skills, problem solving and negotiation skills, interpretation, application, and compliance of relevant legislation; Australian Standards; codes of work practice and company standard operating procedures to ensure safety in gas storage/processing operations.

Authorise and process relevant documentation to permit activities to be undertaken, cancelled or completed.

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through practical demonstration in an on-the-job or off-the-job work environment or simulation of such an environment. Assessment may be carried out by day or night and in varied weather conditions, but must adhere to defined safety and regulatory guidelines.

Pre-requisites

This unit requires, as an entry, attainment of either Certificate III in Gas Operations, Certificate IV in Gas Operations or Diploma of Gas Operations. Entry may also be accepted from those with relevant diplomas of engineering and/or science. As such they would be expected to have sufficient underpinning knowledge and skills in mathematics and science which should accelerate their progress through this unit which leads to the Advanced Diploma in Gas Systems. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

It is also recommended that assessment be conducted in combination with UTG NGS 603A, Manage workplace risk; UTG NGS 604A, Identify and facilitate environmental gas system compliance requirements

Knowledge and Skills

A knowledge of:

Project management and contract/contractor management: industrial awards and employee entitlements; work scheduling and resources management systems;

Relevant understanding of chemistry; relevant mathematical computations and engineering principles; appropriate environmental requirements; company standard operating procedures, site specific safety; construction principles and safety, legislation and safety requirements; emergency response systems;

The operating principles of the pipeline system; LPG supply logistics: design and operations of LPG processing/storage facilities and equipment: design and operation of LPG tankers: distribution logistics; correct waste management procedures; correct procedures for cathodic protection system installation and

adjustment.

The ability to:

Coordinate the work of others; communicate effectively; convene and chair meetings; prepare and present reports; identify workplace hazards; adhere to occupational health and safety, environmental and legislative requirements; make calculations for capacities, pressure ratings and structural dimensions; apply the permit to work system including types of permits and limitations; use emergency equipment including fire fighting equipment; correctly read and interpret plans, drawings; correctly read, analyse, interpret and record data.

Key Competencies

Utilisation of the Key Competencies in the performance of this unit.

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design).

Key Competencies	Level
Communicating ideas & information	3
Collecting, analysing & organising information	3
Planning and organising activities	3
Working with others in a team	3
Using mathematical ideas and techniques	3
Solving problems	3
Using technology	3

UTG NGS 607A
Manage a customer service gas business unit

Descriptor: This Unit covers the competency to manage a customer service gas business unit, to meet the needs of its customer base.

Element		Performance criteria	
607.1	Assess potential in the market place	607.1.1	Organisational strategic and business plans and other relevant documentation are analysed
		607.1.2	Market analyses and environmental scan are conducted and analysed
		607.1.3	Competitors and competing products are identified
		607.1.4	Products and services to form part of the business are selected, consistent with the needs of the market place and the objectives of the organisation
		607.1.5	Competitor product pricing is determined
607.2	Develop business plans for the business unit	607.2.1	Business unit objectives and key performance indicators (KPI) are developed in consultation with relevant personnel and principal stakeholders
		607.2.2	Physical and human resource needs to achieve objectives are identified and negotiated with senior management
		607.2.3	A marketing strategy is developed
		607.2.4	A budget for the business unit is prepared based on objectives and targets
		607.2.5	Business Unit objectives and KPI's are promoted by effective communication to all members of the Business Unit
607.3	Manage the business unit	607.3.1	Distribution systems and logistics are developed
		607.3.2	Sales targets are set and monitored
		607.3.3	Product price and quality is monitored in the market place
		607.3.4	Supplier and customer feedback is obtained and analysed
		607.3.5	The resources, products and finances are managed in accordance with organisational requirements and sound business practice

Element		Performance criteria	
		607.3.6	Business activities comply with legislative requirements
		607.3.7	Performance monitoring system is developed and implemented
607.4	Review and assess performance of the business unit	607.4.1	KPI's are reviewed in consultation with relevant personnel
		607.4.2	Barriers to performance are identified, analysed and recommendations for improvement are made
		607.4.3	Product pricing and market share is monitored and measured
		607.4.4	Product quality and sales trend are monitored and recommendations made for replacement of product or review of marketing strategies
		607.4.5	Profit margins are achieved or exceeded
		607.4.6	Customer energy needs are projected
		607.4.7	New products are identified
		607.4.8	Forward estimates are made as per budget cycle
		607.4.9	Records and reports are completed

Range of Variables

Resources may include:

Appropriate personnel; relevant personnel; materials, tools and equipment etc; personal protective equipment and clothing; company standard operating procedures; equipment manuals; training resources.

Appropriate personnel may include:

Organisation employees; contractors; maintenance personnel; appropriately experienced and qualified personnel; site security personnel.

Relevant personnel may include:

Other supervisors; managers; inter-company departments; other utilities; consultants; council representatives; government bodies/agencies; producers; transporters; shippers; customers; land owners.

Legislative requirements may include:

Occupational health and safety legislation; government acts and regulations; Australian Standards and Codes of Practice; environmental legislative requirements.

Effective communication may include:

Verbal directions; relevant documentation; project records/reports, presentations and meetings.

Relevant documentation may include:

Company business plans and marketing plans, business projections, budgets and forecasts, profit and loss statements, company standard operation and safety procedures; company management plans and policies; company forms and files; OH&S, laws and codes of practice; government legislation, acts and regulations; environmental legislative requirements; quality assurance; commercial agreements.

Records and reports may include:

Business plans and marketing plans, KPI's reports, financial reports and forecasts, monthly statements/invoices, personnel reports, Lost Time Injury reports, debtor/creditor reports.

Evidence Guide

Critical aspects of evidence

These will include interpretation of organisational business and management plans, budget forecasts and financial reports, setting and monitoring key performance indicators; interpretation, application, and compliance of relevant legislation; Australian Standards; codes of work practice and company standard business operating procedures. Authorise and process relevant documentation to permit activities to be undertaken, cancelled or completed.

Context of assessment

Assessment of competency, including attainment of relevant knowledge and skills may be made through action learning activities, which integrate the achievement of competency with live work situations. Alternatively, practical demonstration in an on or off-the-job environment or simulation of such an environment may suffice.

Pre-requisites

This unit requires, as an entry, attainment of either Certificate III in Gas Operations, Certificate IV in Gas Operations or Diploma of Gas Operations. Entry may also be accepted from those with relevant diplomas of engineering and/or science. As such they would be expected to have sufficient underpinning knowledge and skills in mathematics and science which should accelerate their progress through this unit which leads to the Advanced Diploma in Gas Systems. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

It is also recommended that competency is established in conjunction with units UTG NGS 608A, Manage physical resources and UTG NGS 609A, Manage financial resources.

Knowledge and Skills

A knowledge of:

Sound business operating principles and performance measures (KPI), financial and personnel management, business performance measures, competition policy, budgets, product pricing and tariffs, financial reports and forecasts, customer and supplier relations, marketing and planning principles, business planning, industrial relations, risk management, environmental management and occupational health and safety legislation, distribution plans and logistics management.

The ability to:

Coordinate the work of others; set and achieve targets, communicate effectively; prepare and present reports, convene and manage meetings and consultative forums, liaise with internal and external stakeholders at all levels, negotiate sales contracts, conduct market analyses, apply pricing schedule in a competitive marketplace, adhere to occupational health and safety, environmental and legislative requirements; correctly read, analyse, interpret and record sales data.

Key Competencies

Utilisation of the Key Competencies in the performance of this unit.

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design).

Key Competencies	Level
Communicating ideas & information	3
Collecting, analysing & organising information	3
Planning and organising activities	3
Working with others in a team	3
Using mathematical ideas and techniques	3
Solving problems	3
Using technology	3

UTG NGS 608A
Manage financial resources

Descriptor: This unit covers the competency to manage financial resources to achieve organisation and operational objectives.

Element		Performance criteria	
608.1	Develop a budget	608.1.1	Budget format is identified and consistent with organisational guidelines and procedures
		608.1.2	Cost elements are identified and quantified to eliminate/reduce wastage
		608.1.3	Cost benefit analyses are prepared for major cost items in accordance with the organisation's policy and procedures
		608.1.4	Sub-budgets prepared by other staff are coordinated in order that desired objectives are achieved
		608.1.5	Implications of major shifts in proposed or actual budget expenditures are analysed, determined and taken into account
		608.1.6	Performance indicators are developed and agreement reached based on the budget
		608.1.7	Budget is developed
608.2	Allocate, authorise and monitor expenditure	608.2.1	Financial resources are allocated as agreed to in the operational plan and the budget negotiation process
		608.2.2	Expenditure management meets the financial accountability requirements of the organisation
		608.2.3	Expenditure is kept within budget or any potential over-runs identified and budget renegotiated accordingly
		608.2.4	Expenditure is authorised within financial authority limits established by the organisation
		608.2.5	Supply and expenditure processes are in accordance with corporate governance and organisational protocols
		608.2.6	Financial reports are produced when and in a format required by the organisation
		608.2.7	Sub-budgets are continuously monitored to ensure appropriate controls and authorisations are observed

Element		Performance criteria	
		608.2.8	Financial allocation is continually monitored against organisational objectives and priorities ensuring optimum service delivery
		608.2.9	Re-allocation of resources is undertaken taking into account of needs and priorities
608.3	Utilise relevant financial management information systems	608.3.1	Management information systems are used for planning, implementing and monitoring the financial resources usage in accordance with company policies, procedures and processes
		608.3.2	Management information system reports are produced, verified and interpreted
608.4	Review budget management	608.4.1	Management of budget is reviewed in accordance with company policies, procedures and processes
		608.4.2	Management of budget is reported in accordance with company policies, procedures and processes

Range of Variables

Budget formats may include:

Zero based budgeting, program budgeting, line item budgeting.

Operating budget may include:

Staffing costs, capital expenditure/income, recurrent expenditure/income, forward estimates, cash flow.

Policy may include:

Supply, procurement, expenditure, audit, reporting and recording policies.

Financial reports may include:

Annual reports, program financial statements, accrual reports, monthly/quarterly financial reports.

Management information systems may include:

Computers, communication channels, records management data, procedures, protocol, legislation, guidelines and awards, organisation, legal and policy materials, client information, market trends, registry and file records, library, financial records, basic statistical information, personnel.

Evidence Guide

Critical aspects of evidence:

It is essential for this unit that competence be demonstrated in application of financial resource management in a wide range of contexts in achieving the organisation's financial objectives.

Context of assessment:

Evidence of competent performance by observing an individual in a financial management role within the workplace or operational environment. Knowledge may be assessed through written assignments, project reports, debriefings and action learning projects.

Pre-requisites:

This unit requires, as an entry, attainment of either Certificate III in Gas Operations, Certificate IV in Gas Operations or Diploma of Gas Operations. Entry may also be accepted from those with relevant diplomas of engineering and/or science. As such they would be expected to have sufficient underpinning knowledge and skills in mathematics and science which should accelerate their progress through this unit which leads to the Advanced Diploma in Gas Systems. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

Knowledge and Skills

A knowledge of:

Legislative and organisational procedures for budget development and financial management, financial management principles, accounting principles, organisation's financial management principles, management information systems, costing policies and procedures, accrual and cash management procedures, computer based tools to produce financial reports.

The ability to:

Prepare budgets, cost benefits analysis, produce financial reports, interpret financial reports, monitor financial accounts, utilise management information systems, prioritise financial resource allocation.

Key Competencies

Utilisation of the Key Competencies in the performance of this unit.

Level of utilisation of Key Competencies (1 - perform; 2 - administer; 3 - design).

Key Competencies	Level
Communicating ideas & information	3
Collecting, analysing & organising information	3
Planning and organising activities	3
Working with others in a team	3
Using mathematical ideas and techniques	3
Solving problems	3
Using technology	3

UTG NGS 609A
Manage physical resources

Descriptor: This unit covers the competency to authorise the acquisition and management of physical resources to achieve the business's objectives

Element		Performance criteria	
609.1	Plan, determine and review physical resource requirements	609.1.1	Physical Resource requirements are determined in line with demonstrated needs
		609.1.2	Cost benefit analyses demonstrate the return to the organisation
		609.1.3	Physical Resource requirements are consolidated, rationalised and priorities across workplaces
		609.1.4	Physical Resource requirements are negotiated and acquired in the context of organisational priorities and budget
		609.1.5	Replacement/acquisition/refurbishment of major items are scheduled based on expected lifetime of equipment and anticipated needs of the organisation
609.2	Direct and coordinate the acquisition and allocation of physical resources	609.2.1	Physical Resources are acquired and deployed in accordance with organisational needs
		609.2.2	Physical Resources inventory is established and maintained for easy tracking of resource location/history
		609.2.3	Maintenance schedules and budgets are developed and approved in consultation with stakeholders with due regard to occupational health and safety needs and in accordance with organisational policies and procedures
		609.2.4	Systems are developed and implemented which facilitate collection, processing and management of data on resource use and maintenance/asset management
		609.2.5	Physical Resource performance is evaluated against standards, to ensure efficient, effective and safe operation
		609.2.6	Physical Resource use is maintained to ensure operational requirements are met
		609.2.7	Physical Resources are reallocated or disposed of in accordance with organisational policy and procedures as necessary for maximum performance across the organisation

Element		Performance criteria	
609.3	Evaluate and report on physical resource provision	609.3.1	Effectiveness of acquisition and allocation of resources is monitored and assessed to meet organisational needs
		609.3.2	Inefficiencies in resource provision are identified and corrected
		609.3.3	Acquisition and allocation of resources and costs incurred are recorded and reported

Range of Variables

Physical resources:

Properties/facilities, fixtures and plant, vehicles, equipment, stock and supplies, gas systems and plant, works depots, pipelines, distribution systems, storage depots and installations.

Acquisition and allocation of resources based on:

Identified priorities, suitability, type of physical resource, urgency, cost of use, accessibility, endurance, maintenance demands, deployment time, customer needs, hazard and risk analysis.

Organisational policy and procedures may vary between sectors and organisations may include:

Legislation relevant to the management of physical resources, legislation relevant to the organisation, operational, corporate, strategic plans, organisational performance standards, organisational personnel practices and guidelines, organisational quality standards, government policies, Standard Operating Procedures, Australian/New Zealand Standards, ISO Standards.

Budget formats may include:

Zero based budgeting, program budgeting, line item budgeting, organisation specific budgets, output/outcome budgeting.

Budget may include:

Capital expenditure, recurrent expenditure, output investment proposals, cash flow.

Relevant authorities and other stakeholders may include:

Staff, managers, government (state, local, federal), unions, community, industry, owners of leased property.

Expected lifetime of equipment may include:

Organisation's corporate and strategic plans, organisation's financial and other resource management guidelines, government policy, capacity of equipment to perform to operational requirements.

Reports may include:

Spread sheets, written reports, completion of proformas, completion of forms, verbal reports, government budget submission proformas.

Evidence Guide

Critical aspects of evidence

It is essential for this unit that competence be demonstrated in knowledge and application of asset management in a wide range of contexts in achieving the organisation's objectives.

Context of assessment

Evidence of competent performance should be attained by observing an individual in a physical resource management role within the workplace, exercise or operational environment. Knowledge may be assessed through written assignments, projects, reports, debriefings and action learning projects.

Pre-requisites

This unit requires, as an entry, attainment of either Certificate III in Gas Operations, Certificate IV in Gas Operations or Diploma of Gas Operations. Entry may also be accepted from those with relevant diplomas of engineering and/or science. As such they would be expected to have sufficient underpinning knowledge and skills in mathematics and science which should accelerate their progress through this unit which leads to the Advanced Diploma in Gas Systems. However, should this not be the case a suitable *bridging program* is to form part of the entry requirement.

Knowledge and Skills

A knowledge of:

Stock handling procedures, budget processes, resource management systems, organisational policy and procedures relating to physical resource acquisition and allocation.

The ability to:

Analyse costs and benefits of resource acquisition and utilisation, utilise resource inventory, develop maintenance schedules and budgets, evaluate resource performance, monitor the effectiveness of resources acquisition and allocation.

Key Competencies

Key Competencies	Level
Communicating ideas & information	3
Collecting, analysing & organising information	3
Planning and organising activities	3
Working with others in a team	3
Using mathematical ideas and techniques	3
Solving problems	3
Using technology	3