



Australian Government

UEGNSG806 Maintain SCADA controlled flow and pressure equipment and electronic gas measurement equipment

Release: 1

UEGNSG806 Maintain SCADA controlled flow and pressure equipment and electronic gas measurement equipment

Modification History

Release 1: This is the first release of this unit of competency in the UEG Gas Industry Training Package.

Application

This unit involves the skills and knowledge required to maintain supervisory control and data acquisition system (SCADA) controlled gas distribution and transmission station facilities in accordance with relevant legislation, codes of practice, regulations and workplace procedures.

It includes gas station maintenance of equipment, including remotely operated and controlled valves, air loaded and SCADA controlled regulators, Coriolis, and ultrasonic and electronic meters.

This unit applies to the following types of gas stations, subject to work health and safety (WHS)/occupational health and safety (OHS) and duty of care requirements being met for the workplace:

- compressor stations
- custody transfer stations
- inlets and city gates
- scraper stations
- gas storage facilities
- SCADA controlled main line valves

The skills and knowledge described in this unit require a licence or permit to practice in the workplace where work is carried out on electrical installations which are designed to operate at voltages greater than 50 V a.c. or 120 V d.c.

Competency development activities in this unit are subject to regulations directly related to licencing.

Additional and/or other conditions may apply in some jurisdictions subject to regulations related to electrical work. Practice in the workplace and during training is also subject to WHS/OHS regulations.

Pre-requisite Unit

UEGNSG006 Use a portable gas detector to locate escape

Competency Field

Pressure Control Discipline

Unit Sector

Gas Industry

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare SCADA controlled gas flow and pressure equipment and electronic gas measurement equipment

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1.1** WHS/OHS and environmental control measures for the gas station site are identified, obtained and applied
- 1.2** Work requirements are interpreted from plans, specifications and instructions
- 1.3** Relevant job requirements and workplace procedures for work activities are discussed with relevant person/s to determine and confirm work schedule and respective responsibilities
- 1.4** WHS/OHS, environmental and sustainable energy policies and workplace procedures are determined and confirmed
- 1.5** Hazards are identified, WHS/OHS and risks are assessed, and control measures are prioritised, implemented and monitored in accordance with workplace procedures
- 1.6** Scope of responsibility under the relevant work permits and/or relevant notification is determined and confirmed to access, isolate/de-energise systems and perform work in accordance with job requirements and workplace procedures
- 1.7** Equipment, tools and personal protective equipment (PPE) needed to carry out work activities are identified, scheduled, obtained and checked for correct operation

and safety

- 1.8** Appropriate person/s are consulted to ensure work activity is coordinated effectively with person/s involved
- 1.9** Materials, plans, diagrams, drawings and resources required for work are confirmed, scheduled and obtained in accordance with workplace procedures
- 1.10** Relevant responsibilities associated with first aid and related workplace safety procedures at the work site are identified, checked and confirmed
- 1.11** Third-party issues are referred to appropriate person/s in accordance with workplace procedures
- 1.12** Site preparation, safety plan and work schedule are confirmed in accordance with workplace procedures

2 Maintain SCADA controlled gas flow and pressure equipment and electronic gas measurement equipment

- 2.1** WHS/OHS risk control measures, schedule of work and workplace procedures for carrying out work activities are followed
- 2.2** Gas detectors are used to determine work site gas concentration levels and to locate and pinpoint any escaping gas, and supervisor advised immediately if site is unsafe in accordance with workplace procedures
- 2.3** Appropriate materials, tools, equipment and measuring devices are selected and used safely in accordance with workplace procedures
- 2.4** Hazardous activities are conducted safely in accordance with given instructions and to requirements
- 2.5** Work is carried out efficiently, to required industry standard, without waste of materials or damage to apparatus, circuits, and the surrounding environment or services using sustainable energy principles
- 2.6** Hazard warnings and safety signs are identified and assessed as part of WHS/OHS risks and incident control measures and are reported to authorised person/s for directions in accordance with workplace procedures
- 2.7** Electrical isolations are scheduled, and local/remote control actuated and communicated in accordance with

workplace procedures

- 2.8** Data on system performance, usage and unplanned events is collected, reviewed and reported in accordance with workplace procedures
- 2.9** Gas station venting and purging operations are undertaken in accordance with workplace procedures
- 2.10** Gas flow regulator and meter runs, and components are set up and operated, and system is vented, purged and pressurised in accordance with workplace procedures
- 2.11** Process variables and set points are taken and required adjustments and repairs are carried out in accordance with workplace procedures
- 2.12** Actuators are isolated/ de-energised in accordance with manufactures instructions and workplace company procedures
- 2.13** Procedures for referring non-routine events to the authorised person/s for directions are followed
- 2.14** Routine work activity quality checks are carried out in accordance with workplace instructions

3 Complete SCADA maintenance work and relevant documentation

- 3.1** WHS/OHS risk control work completion measures and procedures are followed
- 3.2** Work site is tidied and made safe in accordance with workplace procedures
- 3.3** Tools, equipment and surplus resources and materials are cleaned, checked and securely stored
- 3.4** Appropriate person/s are notified of work completion in accordance with workplace procedures
- 3.5** Work completion documentation is completed accurately and provided to appropriate person/s in accordance with workplace procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEG Gas Industry Training Package Companion Volume Implementation Guide.

equipment must include the following:

- remotely operated valves, types: double block and bleed
- remote telemetry units (RTU's) and controllers
- actuators: pneumatic, electric and I To P convertors
- pressure controllers
- meters: Coriolis and ultrasonic

Note: Fault finding is limited to the component level.

constants and variables must include the following:

- monitoring, adjusting and controlling
- regulation of flow and pressure
- gas measurement
- recording and reporting
- regulation of the system
- equipment
- organisational and statutory requirements
- low voltage electrical work

third-party issues referred to appropriate person/s must include the following:

Unit Mapping Information

This unit replaces and is equivalent to UEGNSG806A Maintain SCADA controlled flow and pressure equipment and electronic gas measurement equipment.

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6a6c032e-ffcb-4f3d-8063-415efbd261e8>

Assessment Requirements for UEGNSG806 Maintain SCADA controlled flow and pressure equipment and electronic gas measurement equipment

Modification History

Release 1: This is the first release of this unit of competency in the UEG Gas Industry Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least two separate occasions and include:

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including:
 - applying workplace procedures and practices
 - using of risk control measures
- applying sustainable energy principles and practices
- completing required documentation and reporting
- dealing effectively with unplanned events in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- identifying and interpreting correctly drawings, diagrams, schedules, workplace procedures and manuals relevant to the work to be undertaken
- maintaining supervisory control and data acquisition system (SCADA) controlled gas flow and pressure measuring and regulating device in accordance with relevant legislation, industry standards, codes of practice, regulations and workplace procedures
- purging and venting components
- replacing, operating, fault finding, adjusting and maintaining gas valves, filters, regulators and pressure relief device
- replacing, operating, fault finding, adjusting/testing, and maintaining pressure measurement, control, boosters and relief device
- selecting correct materials, equipment, tools, personal protection equipment (PPE) and measurement device.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- component types, function and operation, including:
 - data collection and equipment control functions, including:

- remote telemetry unit (RTU)
- plant control system (PCS)
- programmable logic controllers (PLCs)
- distributive control systems (DCS)
- flow control, filtration, pressure control, overpressure control, turbine, ultrasonic and Coriolis metering
- gas station maintenance requirements and procedures
- hazardous activities, including lifting, climbing, working in confined spaces, excavations, trenches or aloft, and use of power tools, techniques and practices
- maintenance supervisory control and data acquisition system (SCADA) gas flow and pressure measuring and regulating device
- principles of SCADA use in monitoring and control of applicable organisational gas infrastructure
- relevant job safety assessments or risk mitigation processes
- relevant legislation, industry standards and codes of practice
- relevant manufacturer specifications, manuals and procedures
- relevant WHS/OHS legislated requirements
- relevant workplace policies and procedures
- relevant workplace reporting and documentation requirements, including:
 - gas facility manuals
 - schematics
 - SCADA displays
 - switches, piping and instrumentation diagram/drawing
- RTUs and associated controller maintenance
- SCADA controlled gas station venting, purging and pressurisation operations
- SCADA gas flow measurement equipment
- SCADA gas station alarms and safety devices
- SCADA operated gas conditioning and monitoring equipment
- SCADA operated gas station valves
- SCADA operated pressure control equipment.

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

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Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, equipment and PPE currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

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