

UEGNSG983Y Undertake routine hydrogen storage operations

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 operate hydrogen storage operations in a hydrogen plant environment. It includes planning and undertaking routine monitoring on hydrogen storage operations and shutting down operations in the event of an emergency.

It also includes using relevant resources and equipment, identifying faults and completing relevant reports and documentation.

The application of the skills and knowledge described in this unit may require a licence/registration to practice in the workplace.

Other conditions may apply under state and territory legislative and regulatory licensing requirements which must be confirmed prior to commencing this unit.

Pre-requisite Unit

Not applicable

Competency Field

Hydrogen

Unit Sector

Gas Industry

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

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

- 1 Plan hydrogen storage operations**
 - 1.1** Work schedule/s, drawings, plans, job requirements and material lists are obtained, analysed and site inspection conducted, as required, to determine the preparation work required for planning and coordination
 - 1.2** Relevant person/s are consulted and work is prioritised and sequenced for completion within agreed timeframes and to industry standards in accordance with workplace procedures
 - 1.3** Hazards and work health and safety (WHS)/occupational health and safety (OHS) risks are identified and prioritised and risk control measures implemented and monitored
 - 1.4** WHS/OHS, environmental and sustainable energy policies and procedures related to the work are obtained to ensure safe systems of work are followed in accordance with workplace procedures
 - 1.5** Relevant work permit/s are obtained for non-routine activities to complete the work in accordance with job/regulatory requirements and workplace procedures
 - 1.6** Appropriate equipment, tools and personal protective equipment (PPE) required for the job are identified, obtained and checked for correct operation and safety in accordance with workplace procedures
 - 1.7** Site is prepared to minimise risk and damage to property, commerce and individuals in accordance with the work schedule and workplace procedures
- 2 Undertake hydrogen storage operations**
 - 2.1** WHS/OHS risk control measures and policies and procedures are followed in accordance with workplace procedures
 - 2.2** Systems isolation is performed in accordance with requirements and workplace procedures
 - 2.3** Routine hydrogen storage operations are undertaken ensuring completion in agreed timeframes with a minimum of waste and damage to the surrounding environment or services

- 2.4** Operation of storage system is monitored to ensure safety and efficiency and system operations communicated to relevant person/s and other work areas in accordance with workplace procedures
 - 2.5** Hydrogen storage operation controls are adjusted and monitored in accordance with work schedule, job requirements and workplace procedures
 - 2.6** Alarm codes, signage and other hazard warnings are correctly recognised and WHS/OHS risks and control measures monitored, actioned and appropriate authorities consulted in accordance with requirements and workplace procedures
 - 2.7** Unplanned events are dealt with in accordance with level of responsibility and workplace procedures
 - 2.8** Work is coordinated to ensure completion in agreed timeframe and to industry standards with a minimum of waste in accordance with job requirements and workplace procedures
 - 2.9** Fault-finding and troubleshooting techniques are applied to problems encountered in accordance with level of responsibility and workplace procedures
 - 2.10** Leakages, damaged pipes and fittings are recorded and reported to relevant person/s in accordance with workplace procedures
 - 2.11** Emergency shutdown procedures are applied in the event of equipment faults/failure or operational parameters being exceeded
 - 2.12** Quality and safety checks of the work are conducted in accordance with job requirements, workplace procedures and community and industry standards
- 3 Complete work and relevant documentation**
- 3.1** Work undertaken is checked for conformance and anomalies and proposed solutions reported to relevant person/s in accordance with workplace procedures
 - 3.2** Relevant records, reports and documentation are completed, processed and provided to appropriate person/s in accordance with workplace procedures

- 3.3** Tools, equipment and any surplus resources/materials are cleaned, checked and securely stored and disposed of, if necessary, in accordance with workplace procedures
- 3.4** Work site is rehabilitated/cleaned up and confirmed safe and secure in accordance with workplace procedures
- 3.5** Notification of completion of work and tasks is communicated to relevant stakeholders 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.

unplanned events must include at least two of the following:

- gas leaks
- fires
- equipment failure
- damage to equipment

Unit Mapping Information

This is a new unit.

Links

Companion Volume Implementation Guides are found in VETNet - [LINK POPULATED ON PUBLICATION](#)

Assessment Requirements for UEGNSG983Y Undertake routine hydrogen storage operations

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Performance Evidence

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

- complying with regulations, industry standards, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including:
 - applying emergency response procedures
 - applying sustainable energy and environmental principles and practices
 - hazard identification and reporting
 - hydrogen specific electrical hazard control measures and earth protection
 - implementing risk control measures
 - selecting and using correct personal protective equipment (PPE)
 - working safely with hazardous materials and equipment
- communicating with relevant stakeholders, including:
 - authorised persons
 - authorities
 - producers and users
- calibrating instruments used in performing tests and checks
- completing relevant reports and documentation
- dealing with unplanned events
- following workplace procedures, including:
 - emergency shutdown procedures
 - standard operating procedures
- interpreting relevant drawings, plans and material lists
- isolating systems
- obtaining and complying with relevant work permits
- performing tests and checks, including:
 - corrosion inspections

- filter checks, including differential pressure
- gas leak test
- meter checks
- pressure and temperature checks
- status and condition checks on ancillary equipment
- visual inspections of relief vents
- planning hydrogen storage operations
- recording relevant information
- shutting down operations and equipment
- using relevant equipment, including:
 - electronic gas detection
 - measuring equipment
 - personal protective equipment (PPE)
- working safely in a hydrogen environment.

Knowledge Evidence

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

- regulations, industry standards, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- principles of safe purging
- correct use of plant and equipment in a hydrogen environment, including:
 - how to select appropriate equipment for tasks associated with hydrogen
 - manufacturer specifications to make adjustments to parts where appropriate
 - measuring equipment
 - operating alarm and communication equipment
 - operating hydrogen analysis equipment
 - operation, testing and inspecting equipment that includes pressure vessels and associated fitting
 - storage equipment, fitting, piping, and controls
 - test equipment and its uses
- hydrogen storage container pressure and capacity recommendations and limitations
- hydrogen physical and chemical characteristics
- gas industry drawings, plans and material lists
- permit to work systems in a hydrogen environment
- relevant safe work method statements (SWMS)/job safety assessments or risk mitigation processes
- relevant stakeholders, including:
 - authorised persons
 - authorities

- producers and users
- relevant WHS/OHS legislated requirements, including:
 - applicable emergency equipment and procedures
 - hazards, risk assessment and control measures
 - environmental and sustainable energy principles and practices, including:
 - blue hydrogen
 - brown hydrogen
 - green hydrogen
 - grey hydrogen
- relevant workplace documentation
- relevant workplace policies and procedures
- technical drawings for the hydrogen environment.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

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 personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

UEG - Gas Industry Training Package Companion Volume Implementation Guide at: [sector webpage link here]