



Australian Government

**Assessment Requirements for UEGNSG902
Commission, operate and maintain
electrolysers**

Release: 1

Assessment Requirements for UEGNSG902 Commission, operate and maintain electrolysers

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 and performance criteria on at least two separate occasions and include:

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including:
 - emergency response procedures
 - sustainable energy and environmental principles and practices
 - hazard identification and reporting
 - hydrogen specific electrical hazard control measures and earth protection
 - implementation of risk control measures
 - selection and use of correct personal protective equipment (PPE)
 - safely working with hazardous materials and equipment
- applying sustainable energy and environmental principles and practices
- checking water supply and waste water systems
- commissioning and operating electrolysers
- communicating with relevant stakeholders, including:
 - authorised persons
 - authorities
 - clients
- completing work and relevant documentation
- complying with regulations, industry standards, legislative requirements, codes of practice, manufacturers' instructions, recommendations and specifications, and environmental requirements
- conducting quality and safety checks
- dealing with unplanned events/situations in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- discharging oxygen safely
- following workplace procedures
- obtaining and using relevant equipment and tools, including:
 - alarm and communication equipment

- fittings
- gas analysis equipment
- hand tools
- leak detection
- personal protective equipment (PPE)
- testing equipment
- safety valves
- performing electrolysers maintenance
- performing stray current testing and protection
- recommissioning electrolysers to safe operational conditions in accordance with job requirements and workplace procedures
- replacing parts and components in accordance with job requirements, level of responsibility and workplace procedures
- reporting problems encountered to appropriate person/s
- shutting down electrolyser operation
- undertaking systems isolation.

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:

- electrolysis processes including:
 - alkaline electrolysis
 - polymer electrolyte membrane (PEM) electrolysis
- electrolysis system components
- electrical safety, including:
 - principles of Ohms Law
 - stack discharge
- gas conditioning
- gas industry drawings, plans and material lists
- hydrogen physical and chemical characteristics
- plant and equipment in a hydrogen environment, including:
 - alarm and communication equipment
 - fittings
 - gas analysis equipment
 - hand tools
 - leak detection
 - testing equipment
 - water backflow prevention
 - water treatment equipment
- permit to work systems for a hydrogen environment

- principles of safe purging
- principles of electrolysis
- regulations, industry standards, legislative requirements, codes of practice, manufacturers' instructions, recommendations and specifications, and environmental requirements
- relevant safe work method statements (SWMS)/job safety assessments or risk mitigation processes
- relevant stakeholders, including:
 - authorised persons
 - authorities
 - clients
- relevant WHS/OHS legislated requirements, including:
 - applicable emergency equipment and procedures
 - hazardous areas
 - hazards, risk assessment and control measures
 - environmental and sustainable energy principles and practices, including:
 - green hydrogen
 - blue hydrogen
 - grey hydrogen
 - brown hydrogen
- relevant workplace documentation
- quality and safety checks
- relevant workplace policies and procedures
- safe handling of gaseous oxygen
- technical drawings for the hydrogen environment
- working safely in a 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

Companion Volume Implementation Guides are found in VETNet -

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