



Australian Government

NWPTRT013 Operate and control liquefied chlorine gas disinfection

Release: 1

NWPTRT013 Operate and control liquefied chlorine gas disinfection

Modification History

Release	Comments
1	This unit was released in NWP Water Training Package release 1.0 and meets the Standards for Training Packages. • New unit, created drawing upon information from deleted unit NWP277A

Application

This unit describes the skills required to monitor and operate liquefied chlorine gas disinfection systems and report on process quality control whilst working safely. This includes being able to demonstrate correct use of self-contained breathing apparatus.

This unit applies to those working as operational staff with specific responsibility for disconnecting and connecting liquefied chlorine gas containers in water and wastewater treatment plants.

The skills and knowledge described in this unit must be applied within the legislative, regulatory and policy environment in which they are carried out. Organisational policies and procedures must be consulted and adhered to including WHS and handling dangerous goods.

Those undertaking this unit would work under supervision, while performing routine tasks, in a range of familiar contexts.

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

Competency Field

Treatment

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section.
1. Prepare to work with liquefied	1.1 Check work procedures and instructions for compliance. 1.2 Check hazard signage for compliance.

chlorine gas	1.3 Select and check tools and equipment. 1.4 Check first aid provisions for potential liquefied chlorine gas exposure hazards. 1.5 Select, fit and use personal protective equipment.
2. Perform liquefied chlorine gas container changeover procedures	2.1 Obtain and handle liquefied chlorine gas containers from the correct storage area. 2.2 Conduct connection and disconnection procedures for chlorine gas draw or chlorine liquid draw systems. 2.3 Move depleted containers within storage area. 2.4 Check and store tools and equipment.
3. Monitor process performance	3.1 Conduct and perform process tests and compare performance to process operational requirements. 3.2 Set critical control point dosing points according to organisation procedures. 3.3 Maintain and monitor relevant WHS requirements. 3.4 Make process adjustments as required to maintain effectiveness of the disinfection system.
4. Complete documentation	4.1 Collect and record process data. 4.2 Report observations outside defined parameters for further action.

Foundation Skills

The foundation skills demands of this unit have been mapped for alignment with the Australian Core Skills Framework (ACSF). The following tables outline the performance levels indicated for successful attainment of the unit.

ACSF levels indicative of performance:

1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Learning					Reading					Writing					Oral communication					Numeracy				

Performance variables:

1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Support					Context					Text complexity					Task complexity				

Further information on ACSF and the foundation skills underpinning this unit can be found in the Foundation Skills Guide on the GSA website.

Range of Conditions

Handling procedures include:	• transport and handling of liquefied chlorine gas containers • container disconnection and connection procedures for chlorine gas or chlorine liquid draw systems • storage of liquefied chlorine gas cylinders or drums
Types of chlorine draw include:	• liquid draw • gas draw
Types of containers include:	• cylinders • drums • tanker deliveries

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=26336bc0-04e5-49d9-8c31-46c49b6a0037>

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Assessment Requirements for NWPTRT013 Operate and control liquefied chlorine gas disinfection

Modification History

Release	Comments
1	These Assessment Requirements were released in NWP Water Training Package release 1.0 and meet the Standards for Training Packages.

Performance Evidence

Evidence required to demonstrate competence must satisfy all of the requirements of the elements and performance criteria. To be deemed competent the candidate must be assessed in at least one type of handling procedure, using at least one type of chlorine draw and at least one type of container listed in the Range of Conditions. If not otherwise specified the candidate must demonstrate evidence of performance of the following on at least one occasion.

- applying correct liquefied chlorine gas container procedures for transport, handling and storage
- operating safely and following procedure when disconnecting and reconnecting gas draw or liquid draw chlorinator systems
- interpreting safety data sheets (SDS)
- selecting, fitting and using PPE, including air supplied self-contained breathing apparatus
- implementing relevant Australian standards, SDS requirements and other legislative and organisational requirements
- following emergency protocols and procedures relating to liquefied chlorine gas hazards
- collecting samples and conducting tests, including at least one of:
 - free chlorine
 - total chlorine
 - pH
 - turbidity
 - temperature
- performing process calculations, including at least one of:
 - feed rate
 - dosage
 - Ct.

Knowledge Evidence

Evidence required to demonstrate competence must satisfy all of the requirements of the elements and performance criteria. If not otherwise specified the depth of knowledge demonstrated must be appropriate to the job context of the candidate.

- personal protective equipment and its application
- self-contained breathing apparatus
- emergency equipment and its application
- properties of liquefied chlorine gas
- basic function and components of gas draw or liquid draw chlorinator systems
- hazards of liquefied chlorine gas handling
- safety data sheet (SDS)
- procedures for liquefied chlorine gas container for transport, handling and storage
- maintenance procedures for personal protective equipment
- AS/NZS 2927 The storage and handling of liquefied chlorine gas
- relevant federal and state or territory legislation and regulations
- codes of practice, associated standards and guidance material
- documented organisational policies, manuals and induction programs
- microbiological guidelines
- reactions with water to produce hypochlorous/hypochlorite ion
- impact of pH on above
- chlorine demands
- disinfection by-products
- breakpoint
- contact time
- Ct.
- chlorine residuals

Assessment Conditions

Competency should be assessed in an actual workplace or in a simulated environment, with access to equipment and infrastructure appropriate to the outcome. Competency should be demonstrated over time to ensure the candidate is assessed across a variety of situations.

Some components of this unit require assessment in a workplace environment therefore the unit is not suitable for fully external or electronic based assessment.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

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