



Australian Government

NWPTRT044 Operate and control desalination processes

Release: 1

NWPTRT044 Operate and control desalination processes

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 NWP357B

Application

This unit describes the skills required to monitor, operate and control a desalination plant, and to measure and report on system performance and process quality control. The ability to identify faults and determine and apply technical adjustments is essential to performance.

This unit applies to those working as operational staff with a specific responsibility for desalination processes in 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.

Those undertaking this unit would work under supervision, while performing routine tasks, within a familiar context.

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. Monitor <i>desalination</i> processes	1.1 Monitor test results and processes to maintain the parameters of operation. 1.2 Identify and report process faults and the operational condition of plant.

2. Operate and control desalination processes	2.1 Carry out routine plant inspections. 2.2 Conduct and analyse process tests and compare performance to plant operational requirements. 2.3 Make integrated process adjustments to optimise system performance. 2.4 Select, fit and use required safety equipment, including personal protective equipment.
3. Complete documentation	3.1 Collect, interpret and record process data. 3.2 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

Desalination processes include:	- reverse osmosis - nanofiltration (NF) - electrodialysis reversal (EDR) - thermal desalination
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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 NWPTRT044 Operate and control desalination processes

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. The candidate must be assessed in at least one of the desalination processes 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.

- determining chemical dosing requirements
- operating control equipment
- solving operational problems
- completing reports and logs
- using safety and personal protective equipment
- operating computerised equipment
- performing system calculations
- monitoring test results and processes
- identifying and reporting faults
- conducting routine plant inspections
- taking samples and performing basic tests
- making basic process adjustments according to instructions including the pre-treatment processes:
 - chemical cleaning
 - pre-treatment optimisation
 - flow control
 - waste disposal
- collecting data and completing required documentation

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.

- system layout
- system processes
- lockout procedures for mechanical and electrical installations
- communication systems
- pre-treatment processes
- hazardous materials handling
- interpretation of material safety data sheets
- principles that form the basis of reverse osmosis and nanofiltration processes
- risk factors and potential hazards
- equipment operation, capacity and limitations
- pipes and fittings
- pumping and valving systems
- mechanical and electrical control systems

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.

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

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