



Australian Government

FBPSUG2023 Operate a cooling water system

Release: 1

FBPSUG2023 Operate a cooling water system

Modification History

Release	Comments
Release 1	This version released with FBP Food, Beverage and Pharmaceutical Training Package Version 2.0.

Application

This unit of competency describes the skills and knowledge required to operate cooling towers or spray ponds to supply treated, cool water for factory requirements.

The unit applies to individuals who work under supervision in the sugar milling industry.

All work must be carried out to comply with workplace procedures according to state/territory health and safety regulations, legislation and standards that apply to the workplace.

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

Pre-requisite Unit

Nil

Unit Sector

Sugar milling (SUG)

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare the cooling tower for operation	1.1 Follow tower cleaning procedures and complete cleaning records according to workplace procedures 1.2 Confirm chemicals are available and delivery systems are ready for operation 1.3 Ensure make-up water supply is available and meets quality requirements 1.4 Select, fit and use personal protective equipment according to

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	workplace safety procedures 1.5 Conduct pre-operational checks according to operating procedures 1.6 Identify and report health and safety hazards and maintenance requirements to appropriate personnel
2. Start and monitor cooling tower	2.1 Start the system according to operating procedures 2.2 Confirm operating condition and cleanliness according to operating procedures 2.3 Monitor, test and adjust water quality according to operating procedures 2.4 Ensure the work area is maintained to meet workplace cleaning standards
3. Analyse and respond to abnormal performance	3.1 Check water condition and plant operating conditions for abnormal performance 3.2 Take corrective action in response to hazards, out-of-specification test results or abnormal plant performance 3.3 Implement emergency procedures according to health and safety procedures in the workplace
4. Shut down and clean the cooling water system	4.1 Ensure the timing and sequencing of system shutdown meets production requirements 4.2 Clean the system according to workplace procedures 4.3 Identify and report operational maintenance requirements 4.4 Record workplace information according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.

Skill	Description
Reading	Interpret information in workplace documentation
Numeracy	Monitor and interpret cooling water system control indicators and

Skill	Description
	data against specifications
Navigate the world of work	- Understand main tasks, responsibilities and boundaries of own role - Apply workplace procedures relevant to own role
Interact with others	Apply workplace communication practices to report issues or provide information
Get the work done	- Access and interpret cooling water system controls and indicators - Make routine decisions to correct abnormal plant performance

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FBPSUG2023 Operate a cooling water system	FDFSUG223A Operate a cooling water system	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume Implementation Guides are found in VETNet: -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=78b15323-cd38-483e-aad7-1159b570a5c4>

Assessment Requirements for FBPSUG2023 Operate a cooling water system

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Performance Evidence

An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.

There must be evidence that the individual has operated a cooling water system in line with workplace contexts and demonstrated each of the following points at least once:

- followed set up and start-up procedures
- selected, fitted and used required personal protective equipment (PPE)
- operated, monitored and adjusted cooling water system operation according to procedures
- maintained work area to meet cleaning standards
- reported health and safety risks and maintenance requirements
- cleaned and shut down the cooling water system according to procedures
- taken corrective action in response to typical operating faults, out-of-specification results or non-compliance
- recorded cooling water system information.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- purpose and principles of evaporative cooling and water treatment to prevent corrosion and microbiological fouling
- equipment purpose and operating principles of cooling water system and related equipment, including pumps, valves, tower and fans and dosing system
- cooling water system layout
- purpose of chemicals used for operating a cooling water system
- water quality test procedures for operating a cooling water system
- the effect of make-up water quality on blow down rates and fouling rates
- typical causes of water contamination, and corrective action
- typical causes and consequences of system fouling
- key health and safety requirements for a cooling water system:

- hazards related to cooling water system operation, and associated control measures
- correct use of PPE
- methods used to render equipment safe to inspect, maintain and/or clean, including lock-out, tag-out and isolation procedures
- procedures for operating the emergency cooling water system
- environmental issues and controls, including those relating to chemical and/or container disposal and any overflow of the system to waters of the state
- recording requirements and procedures relevant to operating a cooling water system
- cleaning standards for maintaining the equipment and work area.

Assessment Conditions

Assessment of skills must take place under the following conditions:

- physical conditions:
 - skills must be demonstrated in a sugar milling workplace or an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - PPE
 - cooling water system and related equipment
 - chemicals
 - test equipment
 - communication system
- specifications:
 - relevant standard operating procedures and related advice on equipment operation
 - workplace cleaning standards for the work area workplace information requirements and procedures.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

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