

<b>Title</b>	<b>Describe process control, P and I drawings, and SCADA, for a water or wastewater treatment plant</b>		
<b>Level</b>	<b>5</b>	<b>Credits</b>	<b>5</b>

<b>Purpose</b>	People credited with this unit standard are able to: describe the factors that impact on a process, and process control system variables; describe the specifications and calibration of the constituent parts of process control; describe the differences between process control methods; describe the operational sequence of information contained in piping and instrumentation (P and I) drawings; describe Supervisory Control and Data Acquisition (SCADA); and identify critical control points of automated process control equipment, hazards, preventive actions, and corrective actions, for a water or wastewater treatment plant.
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<b>Classification</b>	Water Industry > Water - Generic
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<b>Available grade</b>	Achieved
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**Explanatory notes**

- 1 Legislation and references relevant to this unit standard include: Resource Management Act 1991, and subsequent amendments; *Drinking-water standards for New Zealand, 2005 (Revised 2008)*. Ministry of Health, Wellington.
- 2 Definitions  
*Critical control points* – specific point, procedure, or step in water treatment processes at which control can be exercised to reduce, eliminate, or prevent the possibility of a public health hazard.  
*Organisational procedures* – instructions to staff, and procedures which are documented in memo or manual format and are available in the workplace. These requirements include but are not limited to – site specific requirements, manufacturers’ specifications, product quality specifications, and legislative or regulatory requirements.  
*Wastewater* may include stormwater and sewage systems.

**Outcomes and evidence requirements**

**Outcome 1**

Describe the factors that impact on processes, and process control system variables for a water or wastewater treatment plant.

**Evidence requirements**

- 1.1 The factors that impact on processes are described for a water or wastewater treatment plant.
- 1.2 Process control is described in terms of the variables associated with the process.

**Outcome 2**

Describe the specifications and calibration of the constituent parts of process control for a water or wastewater treatment plant.

**Evidence requirements**

- 2.1 The constituent parts of water or wastewater treatment plant process control are described in terms of their specifications.
- 2.2 The constituent parts of water or wastewater treatment plant process control are described in terms of the methods and standards for calibration in order to comply with legislation.

**Outcome 3**

Describe the differences between process control methods for a water or wastewater treatment plant.

**Evidence requirements**

- 3.1 Process control methods are described in terms of their methods of operation and effects on the treatment plant.
- 3.2 Process control methods are described in terms of their differences.

**Outcome 4**

Describe the operational sequence of information contained in P and I drawings for a water or wastewater treatment plant.

**Evidence requirements**

- 4.1 P and I drawings are described in terms of their operational sequence.

**Outcome 5**

Describe SCADA for a water or wastewater treatment plant.

**Evidence requirements**

- 5.1 SCADA is described in terms of the data that is stored, displayed and alarmed and its application in performance monitoring.

- 5.2 SCADA is described in terms of making process changes and corrective actions.

## Outcome 6

Identify critical control points of automated process control equipment, hazards, and preventive and corrective actions, for a water or wastewater treatment plant.

### Evidence requirements

- 6.1 The critical control points in automated process control are identified in accordance with organisational procedures.
- 6.2 The hazards, the causes of the events leading to their appearance, and the factors that affect risk are identified at each critical control point.
- 6.3 The preventive and corrective actions for events related to each hazard are identified in accordance with organisational procedures.

<b>Replacement information</b>	This unit standard and unit standard 24913 replaced unit standard 17872, and unit standard 17873.
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<b>Planned review date</b>	31 December 2021
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### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	19 September 2008	31 December 2018
Review	2	16 March 2017	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0101
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

### Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

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**Comments on this unit standard**

Please contact the Infrastructure Industry Training Organisation [qualifications@connexis.org.nz](mailto:qualifications@connexis.org.nz) if you wish to suggest changes to the content of this unit standard.