



Unit title	Carry Out Valve Operations on the Water Distribution Network
SQA code	HC3V 04
SCQF level	6
SCQF credit points	7
SSC ref	DC03

History of changes

Publication date: March 2016

Version: 01

Version number	Date	Description	Authorised by

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Title	Carry Out Valve Operations on the Water Distribution Network	
Learning Outcomes		Assessment Criteria
The learner will:		The learner can:
1	Assess the implications of valve operations.	<p>1.1 Receive and understand the risk assessment, impact plan and method statement for valve operations to be carried out.</p> <p>1.2 Identify the valve operations to be carried out from instructions received.</p> <p>1.3 Confirm the configuration of valves in accordance with the specified operation.</p> <p>1.4 Identify any unforeseen circumstances or anomalies in the configuration or in the instructions issued and resolve them or forward them for resolution by others.</p> <p>1.5 Take the relevant action where it is identified that the specified valve operations would cause unacceptable problems.</p> <p>1.6 Assess the potential risks of the specified valve operations on customers' supplies.</p> <p>1.7 Confirm that the operation will not contravene organisational quality limits.</p> <p>1.8 Plan the work to minimise the effect of the valve operations on water quality, water supply and to minimise possible discoloration.</p> <p>1.9 Check that customers and other departments who will be affected by the valve operations have been informed in line with organisational requirements.</p> <p>1.10 Select and if necessary test the equipment required to operate valves.</p> <p>1.11 Arrange alternative supplies where the valve operations make it necessary.</p>

Learning Outcomes	Assessment Criteria
The learner will:	The learner can:
<p>2 Access and operate valves.</p>	<p>2.1 Identify the positions, sizes and types of valves and related fittings to be used in accordance with operational requirements.</p> <p>2.2 Determine an appropriate sequence of operation of identified valves and related fittings, taking account of:</p> <ul style="list-style-type: none"> (a) the potential for contamination (b) the effect on water supply and quality (c) undue disturbance of the system. <p>2.3 Access valve chambers safely and establish the appropriate rotational direction for opening and closing valves.</p> <p>2.4 Operate specified valves correctly.</p> <p>2.5 Work in a safe manner that minimises risk to themselves and others affected by their actions.</p> <p>2.6 Identify problems with accessing and operating valves and take the relevant action.</p> <p>2.7 Follow safe working and hygiene practices for valve operations in accordance with current specifications and procedures.</p>
<p>3 Restore the system to normal operations.</p>	<p>3.1 Identify an appropriate sequence and timing of valve and hydrant operations for the required flushing activity.</p> <p>3.2 Purge air from the system for the maximum length of the affected main.</p> <p>3.3 Dispose of flushed water in a safe manner, minimising the effect on the environment, in line with regulatory and organisational requirements.</p>

Learning Outcomes	Assessment Criteria
The learner will:	The learner can:
	<p>3.4 Use correct sampling procedures to confirm restoration of the supply to operational service levels.</p> <p>3.5 Confirm the time limits specified for the operation have been met.</p> <p>3.6 Identify problems restoring the system and take the relevant action.</p> <p>3.7 Confirm that the system has been returned to normal operational levels.</p> <p>3.8 Follow safe working and hygiene practices for restoring the system to normal operations in line with relevant procedures, regulatory and statutory requirements including appropriate disposal of chlorinated water.</p> <p>3.9 Record the changed status of valves and confirm that mains records are updated in line with organisational requirements.</p>

Additional information about the Unit
Unit purpose and aim(s)
<p>This allows learners working on the water distribution network to demonstrate their competence in operating valves to isolate and re-commission a section of the distribution network, transfer water between zones and check that valves are operating correctly.</p> <p>Learners must consider the implications of proposed valve operations on customers, on water quality and on water supply continuity. Those affected by the work must be informed, in line with organisational procedures, alternative water supply arrangements made if necessary. When operating valves, care must be taken to check their position, size and type and to follow the correct operating procedures and sequence. The system must be restored to normal operations, and the learners must carry out appropriate flushing and sampling activities to confirm water quality.</p> <p>Activities undertaken and changes made to the system must be recorded in line with organisational requirements. Learners must follow safe working and hygiene practices at all times.</p>
Details of the relationship between the Unit and relevant national occupational standards (if appropriate)
EUSDC03 — Carry out valve operations on the distribution network
Details of the relationship between the Unit and other standards or curricula (if appropriate)
N/A
Assessment requirements specified by a sector or regulatory body (if appropriate)
<p>Some terms, used in the Assessment Criteria, cover a range of situations, as follows:</p> <p>1 Valve operations are for the purposes of:</p> <ul style="list-style-type: none"> (a) isolating a section of the distribution system (b) re-commissioning a section of the distribution system (c) checking valve operability (d) allowing transfer of water between zones. <p>2 Customers include:</p> <ul style="list-style-type: none"> (a) internal and external customers (b) those with additional needs (c) large users and key accounts (d) those outside an area to be isolated (e) those inside an area to be isolated (f) fire services (g) other departments who might be affected.

**Assessment requirements specified by a sector or regulatory body (if appropriate)
(cont)**

3 **Potential risks** to the supply include:

- (a) water quality
- (b) leakage
- (c) water pressure and flow (loss and surges)
- (d) loss of supply
- (e) discolouration of the supply
- (f) restoration of the supply
- (g) disruption to monitoring equipment
- (h) disruption to DMA/pressure zone monitoring and effects on leakage reporting.

4 **Valves** include:

- (a) soft-faced valves
- (b) hard-faced valves
- (c) clockwise opening valves
- (d) anti-clockwise opening valves
- (e) air valves
- (f) fire hydrants/washouts
- (g) mechanically operated valves
- (h) customer service/communication pipe valves
- (i) service main valves
- (j) trunk main valves.

5 **Problems with accessing and operating valves** include:

- (a) equipment problems
- (b) problems with the valves
- (c) problems with the valve chambers
- (d) problems with valve covers
- (e) problems with network fittings (including hydrants).

6 **Relevant action** taken to deal with problems includes:

- (a) follow relevant company procedures to resolve problems
- (b) rectification of problems within their responsibility
- (c) reporting of problems outside their responsibility.

7 The **system** includes:

- (a) customer supply
- (b) network supply.

**Assessment requirements specified by a sector or regulatory body (if appropriate)
(cont)**

8 Problems restoring the system include:

- (a) problems with supply/water quality
- (b) problems with supply flow and pressure
- (c) problems with discoloured water
- (d) leaks from packing glands
- (e) valves broken shut/open
- (f) surges causing bursts
- (g) aeration incorrectly purged

A variety of valves must be used, with different status settings and different types of valve covers.

Assessment (evidence) Requirements**Workplace evidence**

The majority of the evidence used for this Unit must come from the learner's own work activities, both in their own 'reporting base' and working on the water distribution network.

Knowledge and Understanding

The Knowledge and Understanding requirements for this Unit must be covered in full. The learner may demonstrate considerable knowledge through their workplace performance and during observed assessments, but it is likely that some assessor questioning will be needed to confirm that all knowledge requirements are met. The centre may use oral and/or written questioning to cover the knowledge requirements.

Guidance on Instruments of Assessment

The evidence for this Unit is likely to be generated through a mixture of observation reports, assessor-guided discussions and questioning, and workplace records, reports or documentation.