

## Carry out valve operations on the water distribution network

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### Overview

This Standard is about operating valves to isolate or recommission sections of the distribution network, transferring water between zones, checking valve operability or maintaining a calm network. This could be in relation to customer or network supply and involves assessing the implications of requested valve operations, accessing and operating valves and restoring the system to normal operations. Systematic flushing is covered in EUSWSD8 Cleanse water mains. This Standard is for anyone who works on the water distribution network and carries out valve operations.

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### Performance criteria

- You must be able to:*
1. identify valve operations to be carried out from instructions received
  2. confirm the configuration of valves in accordance with the specified operation
  3. identify the potential risks of the specified valve operations on customers' supplies and confirm that the operation will not contravene organisational quality limits
  4. plan the work to minimise the effect of valve operations on water quality, water supply and possible discolouration
  5. check that customers and other departments who will be affected by valve operations have been informed in accordance with organisational requirements
  6. take relevant action where you consider valve operations would cause unacceptable problems with water quality, flow and pressure, loss of supply or discolouration
  7. arrange alternative supplies when valve operations make it a necessity
  8. identify the positions, sizes and types of valves and related fittings to be used in accordance with operational requirements
  9. determine an appropriate sequence of operation of identified valves and related fittings, taking account of the potential for contamination, the effect on water supply and quality, and undue disturbance of the system
  10. access valve chambers in line with health and safety requirements and establish the appropriate rotational direction for opening and closing valves
  11. operate valves in line with manufacturer's instructions
  12. follow safe working and hygiene practices in accordance with current specifications and procedures
  13. identify an appropriate sequence and timing of valve and hydrant operations for required flushing activities
  14. purge air out of the system for the maximum length of affected mains
  15. dispose of flushed water in a safe manner, and to minimise the effect on the environment, in accordance with regulatory and organisational requirements
  16. take samples in line with organisational sampling procedures to confirm restoration of the supply to operational service levels
  17. adhere to time limits specified for valve operations
  18. use appropriate checks to confirm that systems have been returned to normal operational levels
  19. record the changed status of valves and update mains records in line with organisational requirements

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### Knowledge and understanding

*You need to know and understand:*

1. the purposes of different valve operations 2. how to interpret records, including maps and plans 3. the risks to customers or network supplies posed by valve operations 4. organisational levels of service and limits for valve operations 5. the aspects and issues to consider when planning valve operations 6. the importance of ensuring minimum effect on water supply 7. customer and departmental notification procedures including for large users, fire services, those inside or outside an area to be isolated or those with special needs 8. what would constitute an unacceptable problem, and how to deal with it 9. alternative supply arrangements 10. types of valves and related fittings and how to operate them including air, soft-faced, hard-faced, clockwise opening and anti-clockwise opening valves as well as fire hydrants/washouts 11. problems that can occur with valves and relating fittings including problems with valves, valve chambers, valve covers and network fittings including hydrants 12. potential effects of valve operations on water supply and water quality 13. the causes of contamination 14. the effect of valve operations on network status 15. the factors to consider to determine sequence of operation 16. how to secure safe access 17. the implications of failing to recognise rotational direction of valves 18. typical and unusual problems and organisational requirements for dealing with them 19. safe working and hygiene practices 20. how to restore the system to normal operational levels 21. what is covered by normal operational levels 22. purging methods, the purpose of this and the implications of not doing it properly 23. de-chlorination methods and when they should be used 24. sampling procedures 25. service levels 26. disposal requirements 27. the damage which can be caused by incorrect disposal of chlorinated water 28. regulatory requirements for disruption to water supply 29. typical and unusual problems and organisational requirements for dealing with them 30. recording procedures

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| <b>Developed by</b> | Energy & Utility Skills |
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| <b>Version Number</b> | 2 |
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|----------------------|-------------|
| <b>Date Approved</b> | 01 Dec 2018 |
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| <b>Indicative Review Date</b> | 01 Dec 2021 |
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| <b>Validity</b> | Current |
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| <b>Status</b> | Original |
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| <b>Originating Organisation</b> | Energy & Utility Skills |
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| <b>Original URN</b> | EUSDCO3 |
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| <b>Relevant Occupations</b> | Engineer, Water Network Technician, Water Network Controller |
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| <b>Suite</b> | Water Supply Distribution |
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| <b>Keywords</b> | valve, distribution, network; water quality; water supply |
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