
Overview

This Standard is about using data and information to check the quality and quantity of the material to be treated as it enters the plant and at the various stages of the treatment process. It involves monitoring the treatment processes in treatment plants and making adjustments to the plant operation where required to optimise the processes and ensure the quality of the outputs.

It can apply to any treatment process including abstraction, raw water management and pre-treatment, disinfection, chemical dosing and control, clarification, filtration, ozone, membranes, selective ion exchange, absorption, controlling infestation, UV disinfection, maceration, aeration, sludge digestion and mechanical sludge thickening or dewatering. It can also apply to control of supply to distribution including storage points and pumping.

It includes monitoring the treatment processes in treatment plants, assessing whether treatment plant inputs and outputs conform to requirements and making adjustments to the plant operation where required to optimise the processes and ensure the quality of the outputs. It also involves issuing and displaying all safety warnings and disposing of process by-products safely.

This Standard is suitable for operatives that work at water, waste water and sludge treatment processing plants.

Performance criteria

You must be able to:

1. carry out routine monitoring at the frequency specified in the plant procedures
2. confirm flow recording instruments, quality monitors and level indicators are working as required in the plant specification by interpreting monitoring data
3. compare the plant readings and other data with the operating schedule and operating instructions
4. check that the procedures for collecting data from on-site visual assessment and quality tests remain adequate and conform to operating instructions
5. check that the procedures for taking samples for testing remain adequate and conform to operating instructions
6. check the quality and quantity of the materials at key points against processing requirements
7. monitor the collation and use of flow, quality and operational data and make sure they comply with operating schedule and operating instructions
8. implement special monitoring of process inputs and outputs where process adjustments have been made
9. assess process performance from flow, quality, and operational records, and direct observations
10. analyse data from records and direct observations and determine what adjustments are required to achieve optimal performance
11. maintain process throughput within specified parameters
12. assess process inputs and outputs to determine whether the plant has responded to corrective adjustments and conforms to the plant specification
13. complete activities which maintain the optimal performance conditions for the treatment process
14. complete activities to make sure the disposal of process by-products meet with the requirements of legislation, standards, and codes of practice
15. ensure there is a consistent approach to responding to alarms in line with operational procedures
16. use energy monitoring data to maximise energy performance
17. resolve issues where there are problems which arise from inaccurate or incomplete data from treatment processes
18. investigate and resolve failures of process adjustments through

- instruments, configurations, flow, and doses
19. take corrective action where the quality of materials does not comply with the specification
 20. complete plant and process documentation and ensure it provides accurate and up-to-date data in the timescale required
 21. follow the systems for storing and inputting data
 22. check and compare monitoring data using treatment plant records
 23. confirm all materials leaving the plant conform to specification using data readings
 24. make optimisation suggestions using performance monitoring data
 25. provide those with a managerial role with clear information about the adjustments to processes which are being made
 26. inform affected people when plant and equipment is to be shut down and when to expect plant and equipment to be re-started and re-commissioned
 27. issue and display all safety warnings in advance of operational changes to plant and equipment
 28. record and report process defects, the corrective measures taken, and the results and outcomes
 29. maintain records that are in an auditable format
 30. provide access to data records on request
 31. store plant and process records in the designated place
 32. consult and liaise with those with a managerial role on further measures to be taken where there are failures to adjustments

Knowledge and understanding

You need to know and understand:

1. the organisation's process for managing statutory inspectorates
2. the organisation's process for managing emergency situations
3. the organisation's process for safe working practices when dealing with equipment, instrumentation and environment, including lone working
4. your own role, responsibilities, and actions in sustaining favourable environmental conditions
5. the organisation's process for treating water or waste water
6. the organisation's process for disposing of treatment process by-products
7. the steps involved in predicting changes in quality and flow and the effects of these changes on the unit processes and the final outflow
8. the steps involved when assessing the effects of changes in quality and flow
9. the steps involved in assessing variations in unit process performance and the effects of these variations in the total treatment process
10. the steps involved in assessing the effect of process failure
11. how to implement corrective actions to ensure the process meets its target performance
12. how to assess the effects of a breach of consent for discharges from the process plant on the local environment
13. the steps involved in dealing with technical queries arising from deviations to predetermined performance levels for unit processes
14. the purpose of data audit trails, why they are important and how to maintain them
15. the importance of ensuring maintenance information is accurate, valid and complete
16. the organisation's procedures for recording, retrieving, recording and storing information in the appropriate format
17. the need for information which is provided to other people relating to maintenance activities
18. how to operate treatment processes when there is a computer system failure
19. the organisation's confidentiality policies and cyber security protocols

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20. the impact of changes in the catchment or distribution system on treatment process operations
 21. the importance of maintaining site security

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Monitor and maintain the quality of treatment process outputs



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