Competency Standard for MCERTS Inspectors & Assistant Inspectors – Flow Monitoring

Environment Agency
Version 5
April 2018

mCERTS
THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

Foreword

We established our Monitoring Certification Scheme (MCERTS) to ensure good quality environmental measurements. The scheme is based on international standards and provides for the product certification of instruments, the competency certification of personnel and the accreditation of laboratories.

The standard we focus on in this document sets out the skills MCERTS Inspectors and Assistant Inspectors need. These inspectors must meet the conditions set out in this document.

If a permit says that a site operator must monitor the flow of liquid waste, then arrangements to monitor the flow must be independently assessed against the MCERTS standard 'Minimum requirements for the self monitoring of flow'. MCERTS Inspectors must assess how the site operator monitors the flow of liquid waste on-site.

The benefits of this standard

- The standard makes sure that the operator, the public and other organisations involved in measuring the flow of liquid waste can be confident that the information provided is reliable.
- Everybody in the competitive market of measuring the flow of liquid waste will be working to the same standard.
- The standard sends a message that measuring the flow of liquid waste is an important part of producing reliable information for regulatory purposes.
- By setting quality standards which everybody must work to, the standard promotes and raises the professional reputation of staff and organisations involved in measuring the flow of liquid waste.

If you meet the standard, Sira, who run the scheme on our behalf, will appoint you as an MCERTS Inspector or Assistant Inspector.

If you have any questions about the appointment process, please contact:

CSA Group Testing UK Ltd
Sira Certification Service
Unit 6
Hawarden Industrial Park
Hawarden
DEESIDE
CH5 3US

Tel: +44 (0) 1244 670 900
email: mcerts@csagroup.org

You can get more information on MCERTS, including the standards related to monitoring flow, from our website at www.mcerts.net.

If you have any general questions about MCERTS, please contact:

If you have any general questions about MCERTS or comments on this document please contact our National Customer Contact Centre at:

Email: enquiries@environment-agency.gov.uk

Tel: +44 (0) 3708 506 506

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Contents

Record of amendments

Version number	Date	Key Amendments
3	July 07	QMS assessment added to scope
3	June 07	Modified inspection process
3	June 07	Amendment to Code of Conduct
3.1	April 08	Foreword – Change to Environment Agency address
3.1	April 08	Throughout document – management systems to include both quality management systems and environmental management systems.
3.2	Sept 10	Throughout document – update to reflect the introduction of the Environmental Permitting Regulations (EPR)
3.2	Sept 10	Introduction of the trainee MCERTS Inspector grade
3.2	Sept 10	Throughout document – update of Sira web site details
3.2	Sept 10	Section 3.4 “Knowledge requirements” - written to bring into line with previously published guidance
3.2	Sept 10	Amendment to MCERTS Code of Conduct.
		Version 3.3 missed out to align with the MCERTS: “Minimum requirements for the self monitoring of effluent flow” standard.
3.4	March 12	Section 5.2 Addition of requirement regarding Standards
3.5	Feb 13	Changed contact details for Sira
4	Feb 16	Foreword and Section 6.3 Changed contact details for Sira and EA Sections 1.1; 2.3; 2.4 and 4.1.4 Update title of MCERTS standard: Minimum requirements for the self monitoring of flow. Section 2.4 change ‘and’ to ‘an’ Section 3.4.1 delete ‘effluent’
5	April 18	Forward – change to Environment Agency and Sira contact details. Forward – amendment to wording to clarify who this document is for Various sections – delete ‘effluent’ Various sections - ‘Siraenvironmental.com’ updated to ‘csagroup.org’ 1.1 and 3.1.3 – add ‘other flow measurements’

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1 Introduction

1.1 The effective environmental protection and management of water bodies receiving effluent discharges requires knowledge about the mass release rate of pollutants. This is achieved by combining flow-measurement data (volume/time) with pollutant concentration (mass/volume). The MCERTS Standard: *Minimum requirements for the self-monitoring of flow* specifies the Environment Agency's requirements on Operators for monitoring effluent flow and other flow measurements, including metering installations and associated quality-assurance systems. The Environment Agency requires these self-monitoring arrangements to be independently assessed and certified as conforming to this Standard.

1.2 Personnel are appointed as either MCERTS Inspectors or Assistant Inspectors. This document defines the appointment procedures and competency requirements for MCERTS Inspectors and Assistant Inspectors.

1.3 MCERTS Inspectors are technical specialists who can demonstrate considerable experience and expertise. A key role of MCERTS Inspectors is to apply professional judgement to assessments. They will be able to assess potential effects of deviations in flow monitoring arrangements and quantify these as part of an uncertainty calculation. MCERTS Inspectors can work in isolation or may supervise the work of others.

1.4 Assistant Inspectors have specific technical expertise with respect to flow measurement systems. However, they may not have the breadth and depth of expertise and experience required to make independent judgements on all aspects that may affect the uncertainty of an installed flow measurement system. Data and information recorded by Assistant Inspectors must be quality checked and controlled by an MCERTS Inspector. Any subsequent professional judgement must be applied by an MCERTS Inspector. The Assistant Inspector role will provide a potential career progression route towards the appointment as an MCERTS Inspector.

1.5 There is a technician/trainee grade for individuals working with an MCERTS Inspector and progressing towards appointment as an Assistant Inspector or MCERTS Inspector.

1.6 It is not acceptable for an MCERTS Inspector to simply conduct a desk review of an inspection carried out by an Assistant Inspector and/or a trainee. The MCERTS Inspector must visit the site.

2 Operation of the scheme

2.1 Sira Certification Services (referred to as 'Sira' part of the CSA Group) operates the scheme on behalf of the Environment Agency. Sira also provides bulletins (additional detailed procedures and guidance) which are available at www.csagroup.org/mcerts

2.2 MCERTS Inspectors and Assistant Inspectors are assessed and appointed by Sira in accordance with this MCERTS Standard: Contact details are available at

www.csagroup.org/mcerts

2.3 MCERTS Inspectors assess flow monitoring arrangements in accordance with the MCERTS Standard: *Minimum Requirements for the Self-monitoring of Flow.*

2.4 MCERTS management system auditors conduct an assessment of the management system relating to the Operators flow monitoring arrangements in accordance with the MCERTS Standard: *Minimum Requirements for the Self-monitoring of Flow.*

3 The competency standard

3.1 General requirements

3.1.1 MCERTS Inspectors shall have:

- appropriate qualifications, training and experience
- appropriate knowledge of inspection requirements
- the ability to make professional judgements regarding conformity with the inspection requirements
- appropriate knowledge of the technologies employed
- an understanding of the significance of deviations found with regard to normal use

3.1.2 MCERTS Assistant Inspectors shall have:

- appropriate training and experience
- appropriate knowledge of inspection requirements
- appropriate knowledge of the technologies employed

3.1.3 MCERTS Inspectors and Assistant Inspectors shall be able to demonstrate to the satisfaction of Sira that they:

- operate within an acceptable quality system, for example, BS EN ISO 9001
- have relevant knowledge of effluent treatment processes
- can apply relevant knowledge of the Agency's policy on flow monitoring of effluent discharges and other required flow measurements
- appreciate safety issues connected with on-site inspection work
- are able to use appropriately calibrated and traceable instrumentation and measuring systems
- understand and comply with the MCERTS Code of Conduct attached as an appendix to this standard
- are able to demonstrate that they operate procedures and calculations for determining measurement uncertainty

3.1.4 MCERTS Inspectors or Assistant Inspectors may be:

- self-employed
- an employee of a company, independent of the permit holder

3.2 Scope of appointment

3.2.1 The scope of appointment of an MCERTS Inspector or Assistant Inspector may be limited to certain technical areas, which shall be defined on the Inspector's certificate of appointment. Applicants are required to list on their application those specific technical areas that they consider lie within their field of competence, and any areas which they wish to exclude from their scope.

3.2.2 Appointment of an MCERTS Inspector or Assistant Inspector shall be based on one or more of the subjects from the following list, each of which can be made more specific to reflect a particular Inspector's competence:

- site process configuration
- open channel flow systems
- closed pipe flow systems
- other flow measurement systems

3.3 Qualifications/Experience requirements

3.3.1 MCERTS Inspectors shall have relevant experience of flow measurement acceptable to Sira. Typically, this is likely to include a minimum of five years experience in effluent flow measurement, and 20 joint inspections with an appointed MCERTS Inspector.

3.3.2 MCERTS Inspectors are normally expected to have relevant academic training (for example, in the fundamentals of liquid flow, calculation of measurement uncertainty, principles of open-channel measurement and the principles of flow meters used for part-filled and closed conduit flow monitoring).

3.3.3 Assistant Inspectors are expected to have relevant experience and technical training in the physical measurement of flow monitoring arrangements. Typically, this is likely to include a minimum of one years experience in flow measurement.

3.4 Knowledge requirements

MCERTS Inspectors shall demonstrate their competence in the following areas according to their scope (see 3.2.2). Detailed knowledge requirements are available from Sira.

3.4.1 Knowledge of Environment Agency's flow policy.

- Objectives of the Self Monitoring of Flow scheme.

3.4.2 Health & Safety

- Planning and access
- Method Statements
- Risk Assessment

3.4.3 Selection of flowmeters

- Open channel
- Closed conduit
- Other types of flowmeter (for example, velocity/area)

3.4.4 Knowledge of Processes

3.4.5 Flow Measurement

- Open channel
- Closed Conduit
- Other

3.4.6 Instrumentation

- Operation
- Set-up and validation

3.4.7 Local effects that may impact on

- Open channels
- Closed Conduits

3.4.8 Signal Processing

3.4.9 Telemetry, Data logging and SCADA

3.4.10 Measuring equipment used by MCERTS Inspectors

- Calibration and traceability

3.4.11 Flowmeter performance

- Hydraulics
- Instrumentation

3.4.12 Measurement uncertainty

- Spreadsheet tools or software used to determine uncertainty

3.4.13 MCERTS Concessions

3.4.14 Maintenance and verification procedures

3.4.15 Management systems

3.4.16 Assistant MCERTS Inspectors are only expected to satisfy the above knowledge requirements, where necessary for the limited technical scope sought for their application.

3.5 Calibration of survey/test equipment

MCERTS Inspectors or Assistant Inspectors shall be able to demonstrate that any

equipment used for relevant on-site inspections is fit for purpose. The calibration of all equipment used shall be traceable to national standards to the satisfaction of Sira.

3.6 Integrity and impartiality

MCERTS Inspectors or Assistant Inspectors shall be able to appreciate the potential for conflicts of interest during the inspection of Operator's flow monitoring arrangements. Inspectors shall, at all times, adhere to the MCERTS Code of Conduct attached to this standard as an Appendix.

4 Appointment of MCERTS Inspectors and Assistant Inspectors

4.1 Conformance assessment

4.1.1 Applications for appointment as an MCERTS Inspector or Assistant Inspector shall be submitted on an application form available from Sira.

4.1.2 Applicants shall submit supporting written evidence of their experience and formal training. All records of experience shall be signed by a person deemed to be competent to assess the individual's performance. This signature shall confirm the satisfactory performance of the individual in carrying out the recorded work.

4.1.3 Sira shall decide whether an applicant complies with this Standard by:

- assessing written records of experience
- observing a practical on site assessment

In addition, for appointment as an MCERTS Inspector the applicant shall attend an interview with a technical panel appointed by Sira.

4.1.4 The applicant shall demonstrate the suitability of any software or spreadsheets that they intend to use for data handling and manipulation during inspections. Applicants for MCERTS Inspector will be expected to undertake calculations necessary to indicate compliance of effluent flow monitoring arrangements with the uncertainty target specified in the MCERTS Standard: *Minimum requirements for the self-monitoring of flow*. Applicants for MCERTS Inspector will also be expected to interpret data produced and be able to explain the content of the spreadsheet to Sira.

4.2 Appeals and complaints

4.2.1 Sira will handle appeals and complaints related to Inspector appointments in accordance with its procedures.

4.2.2 MCERTS Inspectors, Assistant Inspectors or their employers shall keep a record of all complaints made against them relevant to the scope of this Standard. They must notify Sira of these within 10 working days.

4.3 Status of appointment

4.3.1 MCERTS Inspectors and Assistant Inspectors are appointed for five years. Sira will

undertake ongoing surveillance throughout this period.

4.3.2 The appointment shall be awarded to an applicant, on a personal basis, for work with a specified employer.

4.3.3 An Inspector's appointment may be transferable for work with another employer (for example, if an Inspector changes jobs). Sira shall ensure that the Inspector is competent to use any different measurement equipment or computer software used by the new employer.

4.4 MCERTS register

Sira shall maintain a publicly available register of all companies that employ appointed MCERTS Inspectors and Assistant Inspectors at: www.csagroupuk.org/mcerts

5 Reassessment of MCERTS Inspectors and Assistant Inspectors

5.1 MCERTS Inspectors and Assistant Inspectors shall undergo reassessment before the end of the five-year period to maintain their appointment. This reassessment shall take account of the latest version of this Standard and an Inspector's ongoing experience. It will confirm that they have retained their technical knowledge and are aware of any relevant new developments in flow-measurement techniques.

5.2 To be eligible for reappointment, an Inspector shall demonstrate that they have:

- carried out inspections of flow-measurement systems on a regular and frequent basis over the five-year period - typically on at least 50 occasions
- not had a gap of more than two continuous years from inspecting effluent flow-measurement arrangements
- kept themselves up to date with relevant developments in the flow-monitoring field, for example, by participating in a documented continual professional development programme
- kept themselves up to date with changes to relevant International Standards
- acted in accordance with the MCERTS Code of Conduct

6 Status of this document

6.1 This MCERTS standard may be subject to review and amendment following publication. The latest version is available on the Environment Agency website at: www.mcerts.net

6.2 Sira will issue bulletins that provide updates on additional guidance and/or instructions. These are available at: www.csagroupuk.org/mcerts

6.3 If you have any questions regarding the inspection process, please contact Sira at:

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Sira Certification Service
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Hawarden Industrial Park
Hawarden
DEESIDE
CH5 3US

Phone: +44 (0) 1244 670 900

E-mail: mcerts@csagroup.org

Appendix

MCERTS Code of Conduct

MCERTS Inspectors and Assistant Inspectors shall adhere to this MCERTS Code of Conduct.

A.1 The Inspector shall comply with the confidentiality, independence, impartiality and integrity requirements as specified by Sira. Details are available from Sira.

A.2 Any potential conflict of interest shall be immediately raised with Sira.

A.3 The Inspector shall provide feedback to Operators on inspection findings in the form of a written report. The feedback shall be generic, for example, identifying the areas requiring attention but not necessarily providing a detailed design solution.

A.4 Under no circumstances shall the Inspector suggest or recommend a single company to carry out remedial work to the detriment of potential competitors.

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