



The Environment Agency's Monitoring Certification Scheme



The Environment Agency's Monitoring Certification Scheme (MCERTS) celebrated its 10th anniversary in April 2008. This scheme, for monitoring equipment and services, highlights the Environment Agency's policy and

ensures that all involved (the Agency, other regulators, those being regulated, and the public) can be confident in data meeting MCERTS standards.

Background

The MCERTS scheme is based on compliance with European and international standards, and prescribes additional performance requirements that must be satisfied. The scheme encompasses two aspects of quality; a certification scheme (to ensure, for example that manufacturer's equipment complies with minimum performance requirements) and an accreditation scheme (to ensure organisations operate within a documented quality management system based on ISO 17025). In addition, the competence of staff undertaking certain monitoring activities is assessed, raising and maintaining the reputation of people and organisations involved in monitoring pollution. On behalf of the Environment Agency, independent organisations (Sira Certification Service and United Kingdom Accreditation Service) undertake third-party audits to ensure the MCERTS performance standards are satisfied before certification and/or accreditation can be granted.

Most analysts are already aware of the need for fitness for purpose in analysis but the scheme further ensures that all certified activities and accredited organisations comply with the Environment Agency's requirements. Like all good schemes, MCERTS has its own logo (above), which can be applied to certified activities and accredited organisations, along with the logo of the certification or accreditation organisation. Before the scheme came into operation, environmental monitoring was often driven by market forces where price was the primary incentive. MCERTS now provides a framework for organisations to focus attention on performance rather than cost.

Progress so far (details overleaf)

- 85 products have been certified under the Continuous And Portable Emissions Monitoring Performance Standard;
- 19 products have been certified under the Continuous Ambient Air Quality Monitoring Performance Standard;

- 470 people have been certified and 32 laboratories accredited under the Manual Stack Emission Performance Standard;
- 17 products have been certified under the Continuous Water Monitoring Equipment Performance Standard;
- over 2500 certificates have been issued for flow monitoring arrangements;
- 7 laboratories have been approved for direct toxicity assessments; and
- over 30 laboratories have been accredited under the performance standard for laboratories undertaking chemical testing of soil.

Future requirements

Work is in hand and consideration is being given to extending the scheme to other areas including

- screening test kits
- sampling of effluents on landfills and other waste sites
- radiochemical analysis of effluents.

Further information

1. MCERTS, PO Box 519, Preston, PR5 8GD, Tel: 01772714361. www.mcerts.net
2. Sira Certification Service, 12 Acorn Industrial Park, Crayford Road, Crayford, Dartford, Kent, DA1 4AL, Tel: 01322520508. Email: mcerts@siraenvironmental.com
3. United Kingdom Accreditation Service, 21-47 High Street, Feltham, Middlesex, TW13 4UN, Tel: 02089178400 Email: info@ukas.com

This Technical Brief was drafted for the Analytical Methods Committee by David Westwood and approved for publication on 27/10/08.

CPD Certification I certify that I have studied this document as a contribution to Continuing Professional Development.

Name.....
Signature..... Date.....

Name of supervisor.....
Signature..... Date.....

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Where does the scheme apply?

To date, MCERTS performance standards exist for all environmental matrices and the following documents have been published.

Air monitoring -

Continuous emission monitoring systems for gaseous, particulate and flow-rate monitoring systems. This certification standard contains performance standards, test procedures and general requirements for continuous emission monitoring systems used for measuring a variety of gaseous or volatile analytes and particulate matter in environments where there are industrial chimney stacks, flues and ducts. Certification comprises three phases, namely laboratory testing, field testing and surveillance.

Ambient air quality monitoring systems. This certification standard contains performance standards for continuous ambient air quality monitoring systems used for measuring a variety of gaseous, volatile or metallic analytes and particulate matter in the ambient air. Certification is assessed on a combination of laboratory and field testing.

Manual stack emission monitoring performance standard for organisations. This accreditation scheme sets out requirements for organisations that wish to monitor pollution released from chimney stacks. The standard focuses on the planning (including site review and risk assessment) undertaking and reporting on the monitoring to be carried out.

Personnel competence standard for manual stack emission monitoring. This certification scheme sets out requirements for individuals who wish to monitor pollution released from chimney stacks. The standard focuses on the experience that individuals should possess and the training they have had, in addition to exams that should be taken and passed.

Examination syllabuses for manual stack emission monitoring. This standard sets out the examination syllabus for the three levels of competence and five technical endorsements required to be a person competent to carry out manual stack emission monitoring for regulatory purposes.

Portable emission monitoring systems - stack emission monitoring, fugitive emissions and land-fill bore-hole emissions. This certification standard contains requirements for suitability and quality for portable emission monitoring systems used for measuring a variety of gaseous or volatile analytes in a variety of applications.

Automatic isokinetic samplers. This certification standard contains requirements for suitability and quality for periodic and continuous automatic isokinetic samplers used for the measurement of pollutant emissions from industrial chimney stacks flues and ducts. Certification comprises three stages, namely laboratory testing, field testing and assessment of results.

Water monitoring -

Continuous water monitoring equipment - Part 1 - Performance standards and test procedures for automatic wastewater sampling equipment. This certification scheme contains performance standards and conformity tests for automatic continuous waste water sampling equipment used for collecting samples of final effluent and influent under the Urban Waste Water Treatment Regulations. (These cover monitoring treated waste water discharges from industrial processes, un-treated waste waters and receiving waters.) Certification comprises two phases, namely laboratory testing and surveillance.

Continuous water monitoring equipment - Part 2 - Performance standards and test procedures for on-line analysers - turbidity, pH, ammonia, COD, TOC, dissolved oxygen, total phosphorus, nitrates, total oxidised nitrogen, conductivity, total chlorine, free cyanide. This certification scheme contains performance

standards and test procedures for permanently installed continuous water monitors used for monitoring selected analytes in treated waste water discharges from industrial processes, un-treated waste waters and receiving waters. Certification comprises three phases, namely laboratory testing, field testing and surveillance.

Continuous water monitoring equipment - Part 3 - Performance standards and test procedures for water flow meters. This certification scheme contains performance standards and test procedures for flow meters measuring volumetric flow-rate or total volume passed in closed pressurised pipes, partially filled pipes and open channels. The standard also covers instruments measuring fluid velocity, differential pressure or liquid level for calculating volumetric flow-rate or total volume passed. Certification comprises three phases, namely laboratory testing, field testing and surveillance.

Portable water monitoring equipment - temperature, pH, conductivity, dissolved oxygen, turbidity, ammonia, nitrate, nitrite, orthophosphate, chlorophyll α , total chlorine, free cyanide. This certification scheme contains performance standards and test procedures for certain types of portable water monitors used when monitoring selected analytes in discharges from waste water treatment works and other industrial processes, as well as the monitoring of natural receiving waters. Certification comprises three phases, namely laboratory testing, field testing and surveillance.

Sampling and chemical testing of water - Part 1 - Performance standard for organisations undertaking sampling and chemical testing of untreated sewage, treated sewage effluents and trade effluents. This newly introduced performance standard requires accreditation to ISO 17025 with additional requirements for performance targets, i.e. precision and bias, selection and validation of methods, sampling pre-treatment and preparation, ongoing quality control, participation in proficiency testing schemes, sampling procedures and the reporting of results and information.

Self-monitoring of effluent flow. This standard contains requirements for the independent monitoring of the flow of liquid waste if consented under the Water Resources Act 1991 or permitted under Pollution Prevention and Control regulations.

Competence standard for MCERTS inspectors and assistant inspectors - Effluent flow monitoring. This standard sets out the minimum skills required by MCERTS inspectors and assistant inspectors in order to undertake the monitoring of effluent flow.

Direct toxicity assessments of effluents. This scheme requires laboratories to follow an appropriate quality management system using prescribed methods and to participate in an Environment Agency proficiency testing scheme.

Performance standard for laboratories undertaking direct toxicity assessments of effluents - Laboratory assessment. The level of assessment is based on three categories depending upon whether the laboratory is UKAS accredited, GLP compliant or neither of these.

Soil monitoring -

Laboratories undertaking chemical testing of soil. This performance standard requires accreditation to ISO 17025 with additional requirements for performance targets, i.e. precision and bias, selection and validation of methods, sampling pre-treatment and preparation, participation in proficiency testing schemes, and the reporting of results and information.

Software -

Performance standard for environmental data management software. Computers are now an integral part of generating, storing, manipulating and reporting environmental data. MCERTS for environmental data management software provides a scheme for certification of data management applications.