

MCERTS Schemes a Review of 2008

The various Environment Agency Schemes have been rolled out over the last 10 years and include the following;

- Continuous emissions monitoring systems
- Manual stack emission monitoring
- Automatic Isokinetic Samplers
- Portable systems for air emissions monitoring
- Continuous ambient air quality monitoring systems
- Continuous water monitoring equipment
- Portable water monitoring equipment
- Self-Monitoring of effluent flow
- Chemical testing of soils

And this year a new scheme has been introduced

Environmental data management software

The advances in the schemes during 2008 are;

Continuous emissions monitoring systems

The introduction of EN15267-3: Certification of automated measuring systems – Part 3: Performance criteria and test procedures for automated measuring systems for monitoring emissions from stationary sources. The MCERTS performance standard was updated to version 3 which includes all the technical requirements of the standards and the UK have been certifying manufactures equipment to the new version.

In 2009 we look forward to the publication of part 1 and 2 of the standard and the European wide certification of products.

To view the latest's documents visit: www.mcert.net

Manual stack emission monitoring

The scheme was introduced in 2002 and covers not only the organisations that carry out stack emission monitoring, who now must hold accreditation to ISO17025 for the MCERTS performance standard, but also the personnel carrying out the monitoring. To date over 500 staff hold certification and in 2008 we saw the first set of the 5 year recertification of staff.

Portable systems for air emissions monitoring

The original scheme covered two type of equipment transportable used by laboratories carrying out stack emission monitoring and portable (battery powered equipment). The standard after discussion with industry was re-written and now only cover portable battery powered equipment.

MCERTS schemes focused at the water industry

These schemes for the water monitoring industry have seen the most significant advancement.

Self monitoring of effluent flow

MCERTS sets a target of +/- 8% uncertainty for the total daily volume of effluent discharged. The scheme has already been successfully applied to the ten

Water Utilities where nearly 3000 MCERTS site conformity inspection certificates have been issued. MCERTS has also been applied to industrial installations with effluent flow monitoring limits included in their Environmental Permitting Regulation (EPR) permits. Many inspections have taken place and we are working with industry to complete the remaining inspections as soon as possible.

Flow monitoring inevitably measures high if it is not installed correctly or properly maintained. Following the MCERTS inspections there have been cases of significant cost savings made by operators - up to £100,000. Measuring flow correctly also allows operators to manage their process to identify product loss and minimise water/power use.

MCERTS: self monitoring of effluent flow is now being considered for introduction to other sites that we regulate with effluent flow monitoring specified in their permit such as:

- non Water Utility sites regulated under the Water Resources Act
- sites regulated under the Radio Active Substances Act
- other EPR sectors such as the waste industry.

Water monitoring equipment

MCERTS sets out our performance requirements and test procedures for three types of continuous water monitoring equipment and for analytical portable water monitoring equipment. Testing includes both laboratory and field trials to provide evidence that the performance requirements can be achieved. This evidence can be provided by data from new tests or in certain circumstances by using existing traceable and verifiable data. An audit of the manufacturing process is also a MCERTS requirement. This audit ensures that all equipment is produced to the same standard.

Parameters included in the on-line analyser standard are: Turbidity; pH; ammonia; COD; TOC; dissolved oxygen; total phosphorus; nitrates; total oxidised nitrogen. Conductivity, total chlorine and free cyanide were added to the latest version of the MCERTS standard published in March 2008. The addition of toxic metals is now being considered.

Direct toxicity assessment of effluents

Direct toxicity assessment (DTA) is a technique used to measure the environmental hazard (toxicity) of a complex effluent and assess the whole effluent toxicity. DTA complements traditional substance specific testing, and is particularly useful for complex effluents where it provides an integrated assessment of all constituents, some of which may not have been identified or be amenable to chemical analysis.

Six laboratories have now gained approval to carry out regulatory work for the Environment Agency by following our published test methods, having an appropriate quality management scheme and participating in the EA DTA proficiency testing scheme (DTAPS). The list of approved laboratories is available on the MCERTS website.

Five test methods have been published, covering both fresh and saline waters:

- Daphnia magna immobilisation
- Freshwater algae inhibition of growth
- Oyster Embryo-Larval development
- Tisbe battagliai lethality
- Marine algae inhibition of growth

The DTAPS scheme has been granted accreditation by UKAS and the fourth annual round has been distributed. Reports from previous rounds of DTAPS are available on the MCERTS website.



Sampling and analysis

An MCERTS performance standard has been developed to cover sampling and analysis of effluents. Initially it will be applied to sewage treatment works effluents regulated under the WRA, because Water Companies are moving towards an operator self monitoring regulatory regime. Water companies will be required to ensure that all sampling and analysis of effluents comply with this MCERTS performance standard. MCERTS provides formal accreditation in accordance with European and international standards.



The standard makes sure that the Environment Agency, the public and other organisations involved in the testing of sewage effluents can be confident that the test results presented are reliable and of an appropriate quality whatever the source.

This MCERTS scheme is based on the requirements of the international standard ISO 17025, which is a general standard for competence of testing and calibration laboratories. ISO 17025 recognises that it may be necessary to develop applications to supplement the standard for specific fields of sampling and analysis. The MCERTS "Performance Standard for Organisations Undertaking Sampling and Chemical Testing of Water: Part 1 - Sampling and chemical testing of untreated sewage, treated sewage effluents and trade effluents" is one such application.



Environmental data management software

This is the latest scheme to be introduced by the Environment Agency.

Some measuring instruments will have been MCERTS certified already, for example against the MCERTS Performance Standards for Continuous Ambient Air Quality Monitoring Systems.

Such instruments perform a certain amount of data manipulation: averaging, sampling, smoothing, calibration, etc that could be interpreted as falling within the remit of this standard. However, such instruments usually provide data to applications in the 'next layer up' that lie more obviously within the scope of this standard. Thus it would only be necessary for an instrument supplier to submit a data management application running as embedded software in the instrument if at least one of the following conditions applied:

The instrument generates official reports directly without the participation of any other 'next layer up' application;

The data manipulation is of a sophistication that raises questions as to whether the software is performing secret manipulations on the data;

There are doubts about the provenance of the software, for example, its origin or maintainability is uncertain;

The supplier is uncertain about the present status of the software in terms of its lifecycle, change control and other quality issues.

The performance standard describes the performance standards, test procedures and general requirements for environmental data management software for compliance with the MCERTS performance standards.

Benefits of the MCERTS schemes

MCERTS delivers a certification scheme that is both accepted and formally recognised within the UK and internationally.

It provides assurance to regulatory authorities that equipment and services approved to MCERTS standards are suitable, and capable of producing results of the required quality and reliability.

It gives users of monitoring equipment confidence that equipment approved by MCERTS is robust and conforms to performance standards related to current international Standards.

It supports the delivery of accurate and reliable data to regulators and the public.

It provides a framework whereby further monitoring instrumentation and other aspects of compliance monitoring can be formally certified.

It meets the growing requirements of EC Directives, which increasingly specify that monitoring systems must meet minimum performance requirements.

Co-operation with industry

The Agency seeks co-operation with the various sectors of industry in 2009 a new organisation was set up the Water Monitoring Association.

Water Monitoring Association

The WMA was formed to influence the development of standards, equipment, personnel and applications that affect qualitative and quantitative water monitoring.

The objectives of the Association are to;

- provide an independent technical resource for members and their clients;
- influence appropriate industry standards, codes, safety procedures and operating principles;
- encourage high level of ethical conduct and the professional development of industry personnel;
- seek co-operative endeavours with other professional organisations, institutions and regulatory bodies, nationally and internationally.

Membership is open to any company or individual that has an interest in the monitoring of water and related fields.

WMA has various task groups set up and one specifically addresses the MCERTS schemes. This group has been set up to support and advise members on the requirements of the various schemes and to liaise with the EA and SIRA, the certification body. The task groups position is to act in an advisory capacity putting the Industry opinion to the EA by reviewing current and proposed standards and suggesting amendments.

For more information visit: www.w-m-a.org

The Source Testing Association

The Source Testing Association (STA) has worked with the EA for many years on all the MCERTS schemes relating air emission monitoring and now provides the technical resource to SIRA. The STA was established in 1995 and has a corporate membership of over 200 companies from process operators, regulators, equipment suppliers and test laboratories. The STA is a non-profit making organisation.

The STA is committed to the advancement of the science and practice of emission monitoring and to develop and maintain a high quality of service to customers.

The Associations headquarters are based in Hitchin, Hertfordshire with meeting rooms, library and administration offices.

The Association offers a package of benefits to its members which include:

- Technical advice relating to emission monitoring
- Conference and exhibition opportunities
- Seminars and training on a variety of related activities
- Representation on National, European and International standards organisations
- Training in relation to many aspects of emission monitoring
- Liaison with regulators, UK and International, many of whom are members.



CONTACTS FOR SCHEME OPERATORS AND TECHNICAL SUPPORT FOR THE MCERTS SCHEMES

For general information visit www.mcerts.net
MCERTS air schemes for:

Continuous emissions monitoring systems
Portable systems for air emissions monitoring
Continuous ambient air quality monitoring systems
Manual stack emission monitoring

Scheme operators;
SIRA Environmental Ltd
www.sira.co.uk
Tel +44 (0) 1322 520500

UKAS for Manual stack monitoring organisation accreditation
<http://www.ukas.com/>
Tel +44 (0) 20 89178400

Technical support
Source Testing Association
www.s-t-a.org
Tel +44 (0) 1462 450705

MCERTS water schemes for;
Continuous water monitoring equipment
Portable water monitoring equipment

Self-Monitoring of effluent flow
Scheme operator;
SIRA Environmental Ltd
www.sira.co.uk
Tel +44 (0) 1322 520500

Technical support
WRC
www.wrcplc.co.uk
Tel +44 (0) 1793 865000

MCERTS -
Chemical testing of soils
Scheme operator
UKAS
<http://www.ukas.com/>
Tel +44 (0) 20 89178400