

MCERTS SCHEMES - An Overview

The first Environment Agency MCERTS scheme was introduced for the certification of Continuous Emission Monitoring Systems in March 1998 and over a decade later the scheme boasts over 100 certified systems.

The Source Testing Association (STA), www.s-t-a.org, and Water Monitoring Association (WMA), www.w-m-a.org, are the Trade Association's representing equipment suppliers, test houses, operators and regulators, have been working closely with the Environment Agency to develop MCERTS for the air and water schemes.

MCERTS has become a mandatory requirement in recent PPC permits issued to UK process operators. The Scheme benefits include;

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. Process Operators and manufactures have seen these benefits since the implementation of the schemes which now include.

MCERTS - Continuous Emissions Monitoring Systems

The initial focus of MCERTS was on continuous emissions monitoring systems (CEMS) for chimney stacks. The scheme covers:

- Extractive stack emission-monitoring instruments, where a sample of the stack gas is drawn from the stack, generally through a sample conditioning line, into the measuring cell.
- Cross-stack or in-situ emissions monitoring instruments, where measurements of the target species are made within the gaseous atmosphere of the stack or duct.

The performance standards cover a wide range of emission levels including:

- large combustion plant; including gas turbines
- incineration of municipal and hazardous wastes;
- solvent-using processes.

The atmospheric pollutants covered by the scheme are selected so that there is maximum overlap with, and benefits to, a wide range of industrial processes. These now include greenhouse gases and pollutants such as HF and ammonia. Other instruments, which monitor temperature, pressure and mass flow of the stack gas, are also included.

MCERTS - Portable Systems for Air Emissions Monitoring

Portable equipment is often used to monitor pollution from industrial chimney stacks, landfill sites and for fugitive emissions. The performance of monitoring equipment is certified under the MCERTS Portable Emission Monitoring Systems scheme.

MCERTS - Continuous Ambient Air Quality Monitoring Systems

MCERTS for ambient air quality monitoring systems covers instrument systems that measure nitrogen monoxide (NO), nitrogen dioxide (NO₂), sulphur dioxide (SO₂), carbon monoxide (CO), ozone (O₃), particulate matter (PM10 and PM2.5), lead, cadmium, arsenic, nickel and mercury, benzene and polyaromatic hydrocarbons (PAHs).

The instruments are tested against a range of performance criteria in line with the forthcoming CEN standards to give users of the

monitoring equipment confidence in their robustness and ability of delivering accurate and reliable data.

MCERTS - Automatic Isokinetic Samplers

It is required that some industrial companies sample pollutants in chimneys and flues using isokinetic samplers. Isokinetic means that the velocity gas enters the sampler is the same as in the chimney or flue.

Many isokinetic samplers work automatically and must be approved under the MCERTS Automatic Isokinetic Samplers scheme. Two main types of equipment are covered:

- automatic samplers used for dust and aerosol monitoring
- continuous samplers used for long term dioxin monitoring

MCERTS - Manual Stack Emission Monitoring

MCERTS for manual stack emission monitoring was developed in collaboration with the Source Testing Association (STA), the Scottish Environment Protection Agency (SEPA) and the Environment and Heritage Service, Department of Environment, Northern Ireland.

The scheme consists of two components – the certification of stack emission monitoring personnel and the accreditation of stack emission monitoring organisations.

Certification of stack emission monitoring personnel

The MCERTS personnel competency standard enables stack emission monitoring personnel to be formally certified as competent based on experience, training and examination. The associated MCERTS examination syllabuses specify the topics covered at the various levels of competency.

Accreditation of stack emission monitoring organisations

The Environment Agency requires organisations who wish to undertake MCERTS approved monitoring to be accredited by UKAS to the international standard ISO/IEC 17025 for the MCERTS performance standard for organisations. The MCERTS standard provides an application of ISO/IEC 17025 in the specific field of stack emission monitoring.

MCERTS - Continuous Water Monitoring Equipment

The Environment Agency is interested in the monitoring of waste-water discharges and receiving water quality as a means of assessing the environmental impact of the industries it regulates. Actions can then be taken to prevent, or minimise, any impact and prevent potential harm from occurring.

Continuous water monitoring equipment must be of an acceptable standard to ensure that the environment remains properly protected. Regulations such as Pollution Prevention and Control (PPC) require operators to use MCERTS approved products.

Equipment is certified and tested under the MCERTS Continuous Water Monitoring Equipment scheme, which covers three types of equipment:

- Automatic wastewater sampling equipment
- On-line analysers for turbidity, pH, COD, TOC, dissolved oxygen, total phosphorous, nitrates and total oxidised nitrogen
- Water flowmeters

MCERTS - Portable Water Monitoring Equipment

The requirements for certain types of portable water monitoring equipment are also addressed. Portable water monitoring equipment is used for the monitoring of water and waste-water, rivers, lakes and estuaries, reservoirs, boreholes and trade effluents. The determinands covered include temperature, pH, conductivity, dissolved oxygen, turbidity, ammonia, nitrate, nitrite, orthophosphate and chlorophyll a. This list of determinands may grow in the future if there is sufficient support from manufacturers and/or user groups.



MCERTS - Chemical Testing of Soils

The Environment Agency has published an MCERTS performance standard for the chemical testing of soils. The key aim is to deliver greater consistency of data from laboratories carrying out the chemical testing of soils, particularly for regulatory purposes. Laboratories undertaking such work are required to maintain accreditation to ISO/IEC 17025 for the MCERTS standard.

MCERTS - Self-Monitoring of Effluent Flow

Effective environmental protection and management of water bodies receiving effluent discharges requires knowledge of the mass release rate of pollutants. This is achieved by combining flow-measurement data with pollutant concentration data.

The Environment Agency's requirements for the self-monitoring of effluent flow include:

- Performance requirements for flow-metering installations in terms of a target measurement uncertainty
- Quality-assurance system requirements to ensure the ongoing performance of flow-metering installations

Process operators discharging effluent to a river, small watercourse or the sea must monitor the volume of effluent discharged. So far this has only applied to large sewage treatment works, but from February 2007 is being extended to PPC installations with effluent flow monitoring specified in their permits. This will include discharges to public sewer too.

Operators are required to have their flow monitoring arrangements inspected by a nominated "MCERTS Inspector" under the MCERTS Self Monitoring of Effluent Flow Scheme. Flow monitoring arrangements which meet the Environment Agency's requirements can apply to Sira Certification Service for an MCERTS Site Conformity Inspection Certificate.

MCERTS – Environmental Data Management Software

Computers are now an integral part of how environmental data is generated, stored, manipulated and reported. MCERTS for environmental data management software provides a formal scheme for the product certification of data management applications

For more information on all the MCERTS schemes visit www.mcerts.net

AUTHOR DETAILS

Dave Curtis
Source Testing Association
Unit 11,
Theobald Business Centre,
Knowl Piece, Wilbury Way,
Hitchin, Herts
SG4 0TY, UK
Tel: 01462 457535
Fax: 01462 457157
Web: www.s-t-a.org