

MCERTS

the environmental future for monitoring systems and services



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a brief introduction and guide to MCERTS



What is MCERTS?

MCERTS is the Monitoring Certification Scheme of the Environment Agency (EA), which has been established to improve the quality and consistency of environmental data as the foundation for regulatory monitoring.

To support MCERTS, a comprehensive selection of certified instruments, methods and services are being developed by instrument manufacturers, test houses and laboratories, monitoring contractors and other third parties.

Currently MCERTS covers the following:

- *Continuous Emissions Monitoring Systems (CEMS)* i.e. instruments used to monitor emissions to the environment from chimney stacks
- *Continuous Ambient Monitoring Systems (CAMS)* i.e. instruments used to monitor the air quality in the vicinity of regulated sites
- *Manual Stack Emission Monitoring* i.e. organisations and personnel undertaking periodic monitoring of chimney stacks
- *Chemical Testing of Soil* i.e. laboratories undertaking chemical analysis of soil when the results are to be used by the Agency
- *Continuous Water Monitoring Equipment* i.e. continuous sampling equipment and instruments used to monitor water/liquids/effluent
- *Self Monitoring of Effluent Flow* i.e. where permit/consent holders self-monitoring of effluent flow arrangements are inspected by independent MCERTS Inspectors.

There is already quite extensive co-operation between the EA and European and overseas bodies, including the German Federal Environment Agency (UBA), CEN who is tasking a working committee with the development of a European-wide scheme for CEMS and CAMS based largely on MCERTS, CESI (an Italian certification body); interest has also been expressed from Canada, USA, Australia, Poland, China and Hong Kong.

In the UK, the Agency is assisted in the operation of MCERTS by SIRA Certification Services (Sira), UK Accreditation Service (UKAS) and the Source Testing Association. Organisations such as the Water Research Centre have also been involved in drafting specifications e.g. for MCERTS Standards relating to continuous water monitoring equipment.

Why is MCERTS needed?

MCERTS has been introduced to ensure minimum quality standards across regulated processes.

International regulations and EC Directives are all becoming stricter, and MCERTS will assure users of certified instruments, equipment, packages and services that they meet these new requirements, wherever they originate.

The level of interest shown across Europe and from other major industrial nations and producers of instrumentation demonstrate the importance of MCERTS.

MCERTS has been particularly devised to improve the accountability of self-monitoring by operators of regulated processes under the appropriate EC Directives (e.g. Large Combustion Plant and Waste Incineration Directives), and ensuring that they take full responsibility for their processes.

By adopting MCERTS, organisations that have an interest in operating regulated processes and in monitoring how the quality of the environment is affected will be assured that they are starting from the same quality basis in equipment, techniques and personnel, with the highest degree of confidence in the data.



How will it apply to me?

If you are an operator of an Agency regulated process, for instance operating boiler plant burning fossil fuel, under IPC or IPPC legislation the use of appropriate and available MCERTS equipment and services is required unless agreement in writing has been obtained from the agency.

If you are regulated under the Water Resources Act and monitor your effluent flow arrangements, MCERTS is mandatory - initially targeted for Water Utilities.

If you submit chemical analysis of soil/contaminated land to the Agency then MCERTS is mandatory.

As the MCERTS scheme evolves, then it could apply to most Agency regulated sites that have emissions or discharges in order to minimise damage to our air, soil or water environments,

Your monitoring systems, equipment, laboratory and quality assurance systems will need to conform with appropriate and relevant standards laid down e.g.

- ISO 17025 for monitoring and equipment testing
- EN 45004 for inspection of effluent flow monitoring arrangements
- EN 45011 for product certification
- EN 45013 for personnel competency

For further information on these standards, please see the [British Standards website](#) (relevant website addresses are given towards the back of this booklet).

To ensure that self-assessment or third party assessment provides the necessary quality and consistency of data, the personnel performing the monitoring and measurements will (if relevant to the scheme) have to comply with the MCERTS competency standards. For example, for stack emission monitoring there is an Entry Level, Level 1 and Level 2 with a series of additional technical endorsements for specific techniques and for inspection of flow there are MCERTS Inspectors and Assistant Inspectors.

Operator Monitoring Assessment

To strengthen its auditing of operators' self-monitoring arrangements, the EA has introduced a scheme known as Operator Monitoring Assessment (OMA).

This will be used by Agency Auditors to assess self and third party monitoring using a consistent and transparent approach, drive necessary improvements and provide feedback to the EA for its own ongoing programmes.

Operators wishing to use an OMA Audit as guidance for their own internal assessments may access it from the EA website. As well as allowing a better understanding of the EA's requirements, it demonstrates the OMA scoring system.

A company's Operating Monitoring Assessment score will increase with use of MCERTS approved products, services and organisations.

In future, more and more organisations will require MCERTS to gain/award contracts in these processes.



When will it be implemented?

MCERTS was introduced in 1998 as a product certification scheme for Continuous Emission Monitoring Systems (CEMS) on boilers and stacks. The scheme was extended in 2000 to include Continuous Ambient Monitoring Systems (CAMS) and in 2002 to manual monitoring of stack emissions (i.e. not continuous).

CEMS - there are more than 35 instruments made in the UK, and imported, which have already been certified with applications for many more

CAMS - a small number of instruments are in the process of certification

Manual Stack Emissions Monitoring - about 200 people hold personal certification and about 20 laboratories hold accreditation to the MCERTS Standard.

Chemical Testing of Soil was introduced in 2003. A number of laboratories now have accreditation.

Self-monitoring of Effluent Flow by Water Utilities and mandatory inspection by appointed MCERTS Inspectors was introduced in January 2004. About 7 companies now offer the services of MCERTS Inspectors.

Continuous Water Monitoring Equipment - performance standards and testing procedures have been published for e.g. flowmeters, turbidity on-line, dissolved oxygen, pH, ammonia etc. A number of manufacturers have signed up for MCERTS Certification and their equipment is currently being assessed and tested. Details should start appearing on the Sira web site later this year.

Who can advise me?

Initially the EA and Defra, but also there are now many other organisations e.g. certified laboratories, WRc and instrumentation manufacturers who can offer guidance.

Websites for further information include: **www.environment-agency.gov.uk**;
www.mcerts.net; **www.defra.gov.uk/environment**; **www.siraservices.com**;
www.wrcapproved.com; **www.npl.co.uk**; **www.ukas.org**

ABB and MCERTS

Within its own unequalled range of instrumentation, ABB is mirroring the progress of MCERTS implementation phases within the monitoring of regulated processes monitoring.

CEMS

ABB's MCERT Certified instruments for stack emissions monitoring include:

MODEL	CERTIFIED RANGE	CERTIFICATE NO.
Zirconia Oxygen Monitor ZFG2/ZDT*	O ₂ 0-25% by vol.	Sira MC 9900001/00
AO2000 Multi-FID 14 Flame ionisation detector	TOC 0-15mg C/m ³	Sira MC 030015/00
Advance CEMAS FTIR-NT, infrared spectrometer	SO ₂ 0-75 mg/m ³	Sira MC 030016/00
	NO 0-200 mg/m ³	
	HCl 0-15 mg/m ³	
	H ₂ O 0-40% vol	
	CO 0-75 mg/m ³	
	O ₂ 0-25% vol	
AO2000 LIMAS UV, UV process photometer	NH ₃ 0-15 mg/m ³	Sira MC 030017/00
	SO ₂ 0-75 mg/m ³	
	N ₂ O 0-33.5 mg/m ³	
	NO 0-200 mg/m ³	
AO2000 URAS 14, infrared photometer	O ₂ 0-25% vol	Sira MC 030018/00
	SO ₂ 0-75 mg/m ³	
	NO 0-200 mg/m ³	
	CO 0-75 mg/m ³	
	O ₂ 0-25% vol	

*The ABB Zirconia ZFDG2/ZDT was the first instrument to be certificated by Sira



Water quality and effluent monitoring

The MCERTS Continuous Water Monitoring equipment scheme has now been implemented and manufacturers have submitted equipment for MCERTS Certification to Sira, who will assess what testing is required with the certification procedures that are in place. It is expected that equipment will start to become available later this year or early 2005.

For processes discharging waste water/effluent, inspection services are offered by MCERTS Inspectors for each individual installation. It will involve assessment of the site process configuration, the flow monitoring arrangements and the quality management system. This is applicable only to that installation and is not transferable. Details of companies employing MCERTS Inspectors is available from Sira.

ABB currently offers a wide range of analytical, flow, level and recording instrumentation and software which includes:

Conductivity, pH and Redox (ORP)	AX400 Series single or dual input analysers
Turbidity monitoring	4670 Series for clean and foul water
Fluoride, Ammonia, Nitrate, Chloride	8230 Series analysers
Nitrates	7330 UV analyser, 8236 ion-selective analyser
Phosphate	8242 Analyser
Organic carbon and coagulation control	7230 Series
Flow metering - clean water, waste water and effluents	AquaMaster, AquaProbe, MagMaster, Parti-Mag Flowmeters from the world's most comprehensive range
Flowmeter calibration verification	CalMaster



For further details about ABB's range of analytical, flow measurement and other instrumentation, please visit www.abb.co.uk/instrumentation or call 0870 600 6122



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