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The Environment Agency delivers a service to its customers, with the emphasis on authority and accountability at the most local level possible. It aims to be cost-effective and efficient and to offer the best service and value for money.

Head Office is responsible for overall policy and relationships with national bodies including Government.

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ENVIRONMENT AGENCY GENERAL ENQUIRY LINE
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MCERTS:
The Environment Agency's Monitoring Certification Scheme

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MCERTS
THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

Introduction

The Environment Agency has established a monitoring certification scheme (MCERTS) to promote quality monitoring data based on international standards. MCERTS initially focuses on continuous emissions monitoring systems (CEMs) for chimney stacks. The scheme will be expanded progressively to cover other types of monitoring such as discontinuous monitors, ambient monitoring systems, water instruments and manual stack testing. This leaflet presents a summary of the scheme for CEMs.

Background

The Agency promotes the use of CEMs. These systems generally make measurements in the hostile environments of industrial chimney stacks, flues and ducts, often on processes with widely varying operating conditions.

The initiative for a monitoring certification scheme arose from the needs identified by:

- the Agency, that performance standards and a type-approval scheme are necessary in the UK to assist industry in choosing monitoring systems which are fit for purpose and promote public confidence in monitoring data provided by operators under Integrated Pollution Control (IPC).
- GAMBICA's (the Association for the Instrumentation, Control and Automation Industry in the UK) Environmental Systems Group, that the establishment of an accessible, rigorous, well founded, and independently accredited scheme would place UK manufacturers of CEMs on a firm competitive basis in world markets.

Benefits of the Scheme

MCERTS:

- makes available a certification scheme which is formally recognised within the UK and is acceptable internationally;
- gives confidence to regulatory authorities that CEMs approved by MCERTS are fit for purpose and capable of producing results of the required quality and reliability;
- gives confidence to users of monitoring equipment that CEMs approved by MCERTS are robust and conform to performance standards which are accepted by UK regulatory authorities;
- supports the supply of accurate and reliable data to the public;
- provides one of the key elements of the Agency's operator monitoring assessment scheme (OMA). This is currently being developed to provide risk based targeting of the Agency's independent monitoring. Under OMA, operators using MCERTS approved CEMs will benefit from reduced Agency monitoring compared to using non-MCERTS equipment;
- provides instrument manufacturing companies with an independent authoritative endorsement of their products which will facilitate access to international markets and the take-up of their products in the UK;
- provides the framework whereby further monitoring instrumentation and other aspects of compliance monitoring can be formally certified in future.

Scope of the Scheme

The initial focus of MCERTS is on:

- 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 emission monitoring instruments, where measurements of the target species are made within the gaseous atmosphere of the stack or duct.

Performance standards have been specified for the following processes:

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

The atmospheric pollutants covered by the scheme have been selected so that there is maximum overlap with, and benefits to, a wide range of industrial processes. The determinands considered are sulphur dioxide (SO_2), the oxides of nitrogen (NO and/or NO_2), carbon monoxide (CO), carbon dioxide (CO_2), hydrogen chloride (HCl), volatile organic compounds (expressed as total organic compounds (TOCs)), oxygen (O_2), water vapour (H_2O),

and particulate material. Other instruments which monitor the temperature, pressure and mass flow of the stack gas are also included. The measurement ranges covered for each of the determinands depends on the specific industrial process for which the CEM is to be used. This is agreed at the time of testing.

As MCERTS develops to cover other processes and services, additional determinands, measurement ranges, cross-sensitivities etc will be added to the performance standard specifications and brought within the scheme.

Instrument Performance Standards

The instrument performance standards have been based on relevant sections of a number of ISO (International Organization for Standardization) and CEN (European Committee for Standardization) standards. The standards are to be published as Environment Agency standards under the MCERTS name. They will be subject to review on a regular basis to ensure they remain up to date.

The standards cover:

- linearity
- cross-sensitivity
- sample pressure and temperature
- delay time, response time
- lower detection limit
- repeatability
- environmental conditions
- physical disturbance
- influence of physical and chemical environment
- evaluation of the accuracy with a Standard Reference Method
- reproducibility
- availability and maintenance interval
- zero and span drifts.

Instrument testing is organised in two parts:

- laboratory based tests
- field trials over a three month period.

Structure of the Scheme

MCERTS has established a formally accredited mechanism operating under the requirements of European standard EN45011 to certify continuous monitoring systems conforming to the MCERTS instrument performance standards.

The Agency has appointed Sira Certification Service as the certification body to operate MCERTS on the Agency's behalf. Sira is independent of all the interested groups, including the instrument manufacturers and end users, and already operates a certification body under the requirements of EN 45011.

Laboratory and field testing is carried out by the National Physical Laboratory and AEA Technology but test house performance standards will be published by the Agency to allow other organisations to offer testing services to MCERTS standards. All testing has to be carried out to EN 45001.

Sira has a governing body made up of nominated representatives from the various interests served, with no one interest being predominant. The membership includes instrument manufacturers' trade associations, instrument users, and the Agency. The governing body is responsible for ensuring that MCERTS meets the requirements of EN 45011.

The evaluation of the results obtained during the laboratory and field testing is carried out by the certification service using a group of independent experts known as the certification committee.

Financing of the Scheme

MCERTS is self-financing with costs recovered from fees charged to applicants to the Scheme. The fees cover:

- the application for instrument certification;
- laboratory and field tests;
- preparation of test reports and, where required, their modification;
- assessments by the Certification Committee;
- preparation of the final MCERTS certificate;
- the promotion and policing of the Scheme;
- the costs of sustaining accreditation to EN 45011.

Instrument Certification Procedure

The instrument certification procedure has been designed to be as simple and straightforward as possible. It consists of the following stages:

Initial application

The instrument manufacturer submits an application to Sira together with unambiguous identification of the instrument, two sets of drawings, control copy of any software and evidence of quality control procedures eg ISO 9001, ISO 9002.

Selection of the certification committee

Sira appoints a certification committee (normally three people) who have knowledge and experience of the instrumentation. They have to be impartial – not involved with the specific manufacturer for the previous two years.

Review of application

The certification committee reviews the application and agrees the relevant performance standards and appropriate laboratory and field tests for the instrument's intended applications.

Quotation for testing

Sira, in conjunction with the applicant, asks qualified test laboratories (initially NPL and AEA Technology) to quote. The client confirms the test programme, test schedule, and quotation, usually in a preliminary meeting with Sira and the test laboratories. The client places a contract with Sira to cover all testing and certification. Sira place a contract with the chosen laboratories.

Laboratory and field tests

The manufacturer sends the instrument(s) directly to the test laboratory. At the conclusion of testing the reports are sent to Sira and the manufacturer. The testing laboratory immediately informs Sira of any failures during testing to allow the applicant to take corrective action.

Review of test results

The certification committee reviews all test results and decides to issue or refuse a certificate. The reasons for refusal will be reported, as will any special conditions applying to the certificate. The certificate and accompanying schedule will list the valid range of applications and processes. These may be extended beyond the test application or process by agreement with the certification committee. A complaints and appeals procedure exists, which may be invoked in the event of any disagreement.

Future Developments

The Agency plans to expand the scheme to cover all IPC processes and other regulatory monitoring activities including:

- discontinuous monitoring instruments
- ambient monitoring
- water monitoring
- manual stack testing.

Further information

MCERTS is open for business from 22 April 1998. If you have any questions regarding the certification process or would like further information on how to make an application contact:

Mr I D Knott
Sira Certification Service
South Hill
Chislehurst
Kent
BR7 5EH.

Tel: 0181 467 2636 Fax: 0181 295 1990
e-mail: idknott@siratc.co.uk

If you have any general questions about MCERTS contact:

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