

MCERTS Approaching the 10th Anniversary

The first Environment Agency MCERTS scheme was introduced nearly 10 years ago. The first scheme was introduced for the certification of Continuous Emission Monitoring Systems in March 1998 and nearly ten years later the scheme boasts over 100 certified systems.

The standard covers extractive stack emission monitoring instruments and cross-stack or in situ monitoring instruments and is focusing initially on large combustion plant, incinerators and processes using solvents. The first certificates were issued in 1999 for 8 systems from a number of UK manufacturers.

The Source Testing Association (STA), the UK trade association representing equipment suppliers, test houses, operators and regulators, has been working closely with the Environment Agency to develop MCERTS and now acts as the Technical Support



arm of SIRA, the scheme operator, for the air 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 and below are a series of cases studies on the application of MCERTS in various fields;

CASE STUDY 1.

Manufacturer: LAND
Plant: MEDWAY POWER STATION, UK

In today's modern world, approval is everything. In everything we do, we constantly strive for approval and acknowledgment that we are achieving the greatest results. In the world of emissions monitoring, this is no exception. That's why having an instrument that meets the approval of



MCERTS is the most reassuring and significant approval that you can get and nothing on the market meets these approvals more than the FGAll- Land Instruments extractive continuous emissions monitoring system.

The FGAll builds on the success of the original FGA and carries a wide range of compliance and performance approvals including those from the US-EPA, German TÜV and of course, MCERTS.

LAND's measurement technique ensures stable long-term operation with high accuracy and very low drift. Engineered for ease of maintenance and packaged for the industrial environment, FGAll stack gas emissions analysers are simple to install and trouble-free in operation.



The FGAll has been installed on many sites through out the world on a whole host of applications and has been especially successful on a number of sites here in the UK. One of these sites is Medway power station, a combined cycle gas turbine power plant owned by Scottish & Southern Energy, one of the largest energy companies in the UK. Located on the Isle of Grain in Kent, two FGAll instruments have been in operation since 2005 and have operated flawlessly since the installation. Matt Borner, Leading C & I Engineer for Medway couldn't be happier with the instruments performance. "The MCERTS approved FGAll has been very reliable and has been hugely successful in continuously monitoring emissions here at Medway".

The FGAll analyser is mounted in a rugged, stainless steel enclosure, with integral LCD control panel. The control system provides all display, configuration and set-up options plus a comprehensive help and diagnostic system.

The FGAll can measure CO, O₂, CO₂, NO, NO₂ and SO₂ in any combination. It provides true NO_x measurement by directly measuring all Nitrogen Oxides present in the flue gas. Using the very latest dual sensor technology, the analyser gives high accuracy readings even at low pollutant levels, making it suitable for the most demanding





emissions legislation and likely future changes.

Case Study 2

Manufacturer: Procal
Plant: District Heating Plant,
Czech Republic.

Following the earlier award of an order for two PULSI 200 MCERTS approved analysers, Procal Analytics Ltd have just received a further order for a single instrument to be located at the district heating plant in Tabor.

These analysers, supplied through Procal's Czech distributor ECM ECO Monitoring, are being installed to monitor emissions on plants that generate hot water for local community.

Further analysers have also been ordered, again through ECM, for two Dalkia owned heating plants located in Karvina.

Each site required four instruments to be controlled by a common Analyser Control Unit.

The analysers are measuring CO₂, NO, SO₂, and H₂O and both sites utilise Procal's Input Output Unit to handle the relatively large quantity of 4-20mA analogue outputs and alarm relays.

Now the LCPD and WID Directives are being implemented across the Eastern Europe EU accession countries, requests for MCERTS approved analysers are growing. Procal is able to offer analysers that particularly suit the measurement of emissions there, including those from the combustion of brown coal or lignite.

Case Study 3

Manufacturer: PCME
Plant: Manufacturing and
Engineering Plant, UK

Crane Fluid Systems, leading UK manufacturer of valves, fittings and engineering products for building services applications effectively manage potential particulate emission excursions from their Ipswich-based plant due to the installation of PCME's MCERTS approved DT990 system.

The 8-channel, Electrodynamic-based system incorporates local alarms at every sensor point for effective acquisition of data to a central control area where the status of emissions can be viewed at a glance and reports generated for full regulatory compliance. MCERTS approved, patented insulated sensors installed in the Knockout Sand Plant ensure reliability in particularly moist environments. In addition, PCME's MCERTS approved particulate emission monitoring systems incorporate robust automatic self-checks including zero and span check for self-validation and patented sensor contamination checks which provide additional assurance of measurement accuracy.



Crane's decision to install an MCERTS approved system maintains accuracy and repeatability in particulate emission measurement quality throughout the site.

What has the future have in hold?

In 2008 we will see the introduction and implementation of the European certification scheme for automatic measurement systems for ambient and stack mounted equipment

The standard, EN15627, will be published in four parts;

Part 1: General Aspects covers;

1. Roles and responsibilities
2. Certification procedure

Part 2: Minimum requirements for product quality assurance, initial assessment and post certification surveillance covers;

1. Management responsibility
2. Resource management
3. Product realisation

4. Measurement, analysis and improvement
5. Assessment

Part 3: Performance criteria and test procedures for automated measuring systems for monitoring emissions from stationary sources covers;

1. General requirements
2. Performance criteria common to all AMS for laboratory testing
3. Performance criteria common to all AMS for field testing
4. Performance criteria specific to measured components General test requirements
5. Test procedures for laboratory tests
6. Requirements for field tests
7. Test procedures common to all AMS for field tests
8. Test procedures for particulate AMS

Part 4: Performance specifications and test procedures for automated measuring systems for monitoring ambient air quality covers;

1. General requirements for ambient AMS systems
2. General requirements for laboratories
3. Type approval of AMS
4. Performance characteristics and performance criteria of for ambient air gas monitoring AMS
5. Performance characteristics and performance criteria of AMS for ambient air particulate matter (pm₁₀ and pm_{2.5})

The Environment Agency is in the process of releasing Version 3 of the MCERTS performance standard for CEM system to comply with the requirement of part 3 of the standard. This will ensure manufactures certification is kept up to date with the European developments.

Full details of all the certified systems can be found on the SIRA web site; http://www.sira.co.uk/mcerts_prodregister.html

Over the years MCERTS has been expanded and now also covers;

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

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
Telephone +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
Tele +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
Telephone +44 (0) 1322 520500
Technical support

WRC
www.wrcplc.co.uk
Tele +44 (0) 1793 865000
MCERTS - Chemical testing of soils
Scheme operator

UKAS
<http://www.ukas.com/>
Tel +44 (0) 20 89178400

AUTHOR DETAILS

Dave Curtis,
Source Testing Association,
UK
Tel +44(0) 1462 457535,
Email: dave@s-t-a.org,
Web: www.s-t-a.org