

# MCERTS and the Water Industry

WATER WASTEWATER

Paul Wiggins, Technical Advisor, Environment Agency, Email: [paul.wiggins@environment-agency.gov.uk](mailto:paul.wiggins@environment-agency.gov.uk)

The Environment Agency is increasing its reliance on consent/permit holders to monitor their own discharges or emissions to the environment. This is called operator self-monitoring. The key benefit of our strategy is to increase the opportunity for continuous monitoring and improve the quality and quantity of environmental data.

Obviously there is a need to ensure that operator self-monitoring can be shown to be reliable, accurate and representative. We achieve this by completing our own monitoring programmes, carrying out targeted audits and setting the standards for operator self-monitoring.

Our required monitoring standards are set out by our Monitoring Certification scheme: MCERTS. This scheme provides a framework within which environmental measurements should be made. There are two applications of MCERTS that are particularly important to the water industry:

- A Product Certification scheme - Continuous water monitoring equipment
- An Inspection scheme - Self-monitoring of effluent flow.

MCERTS also covers stack emission monitoring equipment, personnel and organisations involved in monitoring stacks, ambient air monitoring equipment and chemical analysis of soils. MCERTS is being developed for portable stack emission monitoring equipment, direct toxicity assessment and portable water monitoring equipment. Other application may be considered in the future.

## MCERTS: Continuous Water Monitoring Equipment

Regulatory monitoring regimes such as Water Resources Act 1991 (WRA), Urban Waste Water Treatment Directive, Integrated Pollution Control and Pollution Prevention and Control (PPC) all involve the use of continuous water monitoring equipment. As MCERTS Certified continuous water monitoring equipment becomes available we will increasingly specify it as a requirement e.g. as a permit condition under PPC.

MCERTS provides performance specifications and testing procedures for the following three "classes" of equipment:

- automatic waste water samplers
- on-line analysers: turbidity, pH, ammonia, chemical oxygen demand, total organic carbon, dissolved oxygen, total phosphorus, nitrate and total organic nitrogen
- flow meters.

Each of the above three classes is covered by MCERTS Standards. We are currently writing Version 2 of these Standards with an expected publication date of early 2006.

MCERTS does not specify the techniques used for obtaining measurements of a determinand. MCERTS does specify performance requirements and testing procedures. In other words, it is concerned with how well a determinand is measured. We think that this approach will assist innovation because new techniques can be used provided they can demonstrate that they meet the MCERTS performance requirements.

Sira Certification Services (Sira) operate this product certification scheme on our behalf. Manufacturers who want their equipment MCERTS Certified must apply directly to Sira. Sira provide advice on testing and suitable test houses. They will assess test data to determine if the equipment can achieve the MCERTS requirements. Sira also arrange a quality audit of the manufacturing process.

Performance testing is a key part of the MCERTS scheme. Testing is in two parts, laboratory and field trials. Manufacturers may choose where testing is carried out provided that they demonstrate to Sira that necessary requirements are met. In some specific circumstances, existing traceable and validated data may be acceptable. This could potentially reduce the cost of testing and speed up the MCERTS Certification process.

There are now four MCERTS Certified products (October 2005). They are an automatic sampler, 2 ultrasonic level sensors for open channel flow measurement and a clamp on ultrasonic flow meter for closed pipe flow measurement. Other equipment is currently proceeding through the MCERTS assessment process. Significant numbers of manufacturers are progressing with their applications for MCERTS Certification with Sira. As a comparison, there are nearly 50 MCERTS Certified products available for stack emission monitoring - a scheme that has been operating for approximately five years.

## MCERTS: Self Monitoring of Effluent Flow

We require Water Utilities to measure the total daily volume of effluent flow in excess of 50 cubic metres per day. The total daily volume of effluent should be measured within an uncertainty of +/- 8% at a confidence level of 95%.

Successful flow monitoring depends on using the appropriate equipment combined with effective installation, calibration, maintenance, quality assurance and data management. These must be managed within a quality system that can be routinely audited to ensure that performance is maintained over time. We set our minimum requirements for self-monitoring of effluent flow in an MCERTS Standard.

In addition, we decided that independent inspection of flow monitoring arrangements should be undertaken by appointed specialists, MCERTS Inspectors. They must have proven technical expertise in effluent flow monitoring. This is established by undertaking a review of recent flow monitoring reports, a site audit and an interview by a technical panel. We set the competency requirements for MCERTS Inspectors in an MCERTS Standard.

The scheme works as follows:

- The consent/permit holder contracts an MCERTS Inspector
- The MCERTS Inspector carries out a site inspection to assess if it meets the MCERTS minimum requirements for effluent flow monitoring.
- The MCERTS Inspector will issue an MCERTS Inspection Report to the consent/permit holder confirming that the site meets the MCERTS requirements.

If the site fails to meet the +/- 8% uncertainty target the MCERTS Inspector recommends remedial work. The site will then need to be re-visited to ensure that the remedial works have resolved any issues and the uncertainty target can now be met. Provided that the site now meets the MCERTS requirements, the Inspector can then issue an MCERTS Inspection Report confirming this

- The consent/permit holder also needs to demonstrate that their quality management system can meet the MCERTS requirements. This will require an independent audit.

Since January 2004, we have only accepted reports from MCERTS Inspectors.

Provided that MCERTS requirements are met, Sira will issue an MCERTS Site Conformity Certificate to the consent/permit holder that is valid for five years or until there is any significant change that may impact on the flow monitoring arrangements.

We are now considering an implementation plan for other discharges, for example discharges from industry regulated under PPC regulations and other discharges regulated under the WRA e.g. private waste water treatment works.

## Where can I find more information regarding MCERTS?

MCERTS is constantly evolving. MCERTS Standards are only published on [www.mcerts.net](http://www.mcerts.net) where you will also find regular updates, developments and new proposals. The site includes links to companies employing MCERTS Inspectors and links to manufacturers supplying MCERTS Certified Continuous Water Monitoring Equipment. There are also links to Sira Certification Services.



If you have any questions regarding MCERTS please contact:  
[Paul.wiggins@environment-agency.gov.uk](mailto:Paul.wiggins@environment-agency.gov.uk)