



TWENTY YEARS ON AND STILL FLOWING STRONG - HOW MCERTS IS CONTINUING TO IMPROVE EFFLUENT FLOW MONITORING

It wasn't so very long ago that the UK was known as the dirty man of Europe, with high levels of both atmospheric and water pollution. Fast forward a few decades, and the transformation has been remarkable, the result of massive improvements in the way that wastewater is treated before being returned to the environment.

One key ingredient in this transformation has been MCERTS. Since it was introduced by the Environment Agency 20 years ago, MCERTS has helped the UK to achieve huge improvements in water quality by standardising how utility and industrial companies measure and report their effluent water discharges. By introducing a benchmark approach for the design, operation and maintenance of measurement equipment, as well as the methods for conducting those measurements, MCERTS has gone a long way to helping make the UK's waterways some of the cleanest in Europe.

One of the main aims of MCERTS has been to ensure that both water utilities and industrial companies stay within their regulatory limits for discharging effluent to the environment and that effluent quality meets certain minimum standards. Under the Environmental Permitting Regulations (EPR), all water companies and industrial sites that discharge a volume of treated water greater than 50 cubic meters a day must have their site MCERTS certified. These flow rates must be measured with a daily weighted uncertainty of better than ± 8 percent.

Since its launch, the scheme has undoubtedly brought benefits in the way that effluent discharges are measured, especially when it comes to operators being able to rely on the quality of the measurements. While it is limited to the UK, the scheme's scope and effectiveness has seen parts of it being replicated and adapted for use in other parts of the world.

The quality of flow measurement especially has seen great gains, both in terms of accuracy and the ability of operators to maintain and calibrate their flow meters to a common benchmark. There is now much more willingness to pay attention to the specification of the meter and tweak the design of the measurement site to achieve a much more robust flow measurement system.

This has had a positive impact on the way in which flowmeters are installed. Where it was once common practice to put a flow meter anywhere it would fit, with little regard for how it would operate or how it could achieve the most accurate measurements, there is now much greater thought given to things such as location and accessibility.

As a result, now no meters conforming to MCERTS requirements are buried. Instead, all are fully accessible, using techniques such as chambers, making it easier to remove the sensor and bypass

them with no interruption to the process.

As an evolving standard, MCERTS has also had an impact on the design of these chambers themselves. For MCERTS inspectors, a key benefit of this has been the ability to easily gain access to a chamber to use their own equipment to check and compare the reading from the site meter. Ease of access also makes it much easier to check fouling in pipes, which can lead to increased velocities that can significantly distort the accuracy of flow readings.

With the structure of a water treatment works itself also having a significant influence on flow rates, MCERTS has proven valuable in encouraging operators to reassess and redesign or rebuild open channel flow measurement techniques such as flumes and v-notch weirs to help improve their performance and allow easier access and maintenance.

More education still needed

While MCERTS has undoubtedly contributed to a general awareness of environmental responsibility, there is still a definite sense of confusion about the details of MCERTS and what it entails. Possibly because the scheme relies on site operators to self-monitor their installations, with only a relatively small team of qualified MCERTS inspectors to keep an eye on around 5,000 sites in the UK, many are unsure about how to comply or what happens if they don't.

Anecdotal evidence from inspectors reveals that industrial site operators in particular are still unsure about the full requirements of MCERTS and what it takes for them to fulfil their obligations. One example is the need for surveillance audits, which catch many companies by surprise. Conducted by a quality auditor, these look at how often the measurement device is calibrated and who exactly is responsible for it. It requires evidence of maintenance, often including photographic evidence, an explanation of who is responsible for the data and what happens when unexpected jumps or spikes occur in the data recorded.

These audits come at different intervals depending on how well companies are performing on these quality criteria. A site that has really got its act together on these requirements will be quality audited every two years. One that is trying but not yet perfect will be audited yearly, while a poorly performing site can look forward



to quality inspections every three months. Most water companies are inspected on the yearly interval.

It's difficult to say how this knowledge gap can be bridged. Local EA inspectors are already playing a key role by ensuring companies have a full awareness of all the regulations and processes. Manufacturers and suppliers of MCERTS-certified measurement equipment such as ABB have also put considerable effort into helping to raise awareness of the scheme and how to meet it, at least when it comes to product selection and installation.

What will MCERTS look like in another 20 years?

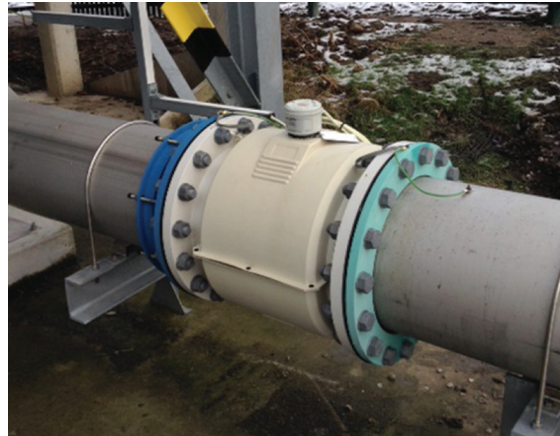
One of the beauties of the MCERTS scheme has been its flexibility. Since its introduction, the scheme has not been set in stone but has instead adapted as new methods and new ways of

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doing things become available. Working groups comprised of manufacturers, process operators and other interested parties have helped to keep the scheme up to date with the latest developments and trends in technologies, enabling MCERTS to look to the future and keep pace with changes.

A good example has been the ongoing development of quality and performance standards for environmental data management software for both air and water emissions monitoring applications. Since its first version in 2011, this set of standards has been continuously revised to reflect new developments in data collection and storage technology, including security safeguards, as well as updates to accommodate new or altered legislation including the Industrial Emissions Directive. With data very much at the front and centre of future developments in the water industry, not least with the move towards the greater



adoption of digital technologies, it is highly likely that this area of MCERTS will experience further evolution.

Ultimately, the inherent robustness of MCERTS will ensure it can continue to adapt to meet the needs of the next 20 years. With a growing realisation of the impact that human activities are having on the environment, utility and industrial companies will increasingly need to be able to demonstrate that they are doing everything possible to improve their effluent discharge performance.

As the first company to achieve MCERTS certification, ABB is well placed to help advise on the selection, operation and maintenance of instruments, analysers and air quality monitoring equipment that can help meet the MCERTS requirements. For help advice, call us on 0870 600 6122 or email us at enquiries.mp.uk@gb.abb.com ref. 'MCERTS'.

Author Contact Details

Alan Hunt, Electromagnetic Flow Product Manager UK&IE, ABB Ltd

• Tel: 01480 475321 • Email: enquiries.mp.uk@gb.abb.com • Web: www.abb.com/measurement

