

The First Step Towards Standardisation - MCERTS and the UK Water Industry

The MCERTS monitoring certification scheme was introduced by the Environment Agency (EA) to ensure the quality and reliability of data relating to environmental measurements. It provides certification of instrument competency, certification of personnel and accreditation of laboratories, with the ultimate goal of protecting the environment. Through MCERTS, the EA aims to minimise its own sample collection and testing and instead encourage manufacturers with permits to perform environmental discharge to carry out monitoring on-site using continuous methodologies. By using MCERTS-certified instruments, organisations can ensure they are producing robust and trustworthy data with the additional benefit of being able to investigate data progression trends over the years.

Analytical Technology undertook the MCERTS certification on its pH water monitors in 2009. Here Michael Strahand discusses the processes and implications of MCERTS for companies operating in the UK water industry.

Regulatory Outlook

MCERTS certification for air monitoring was introduced over 10 years ago and the certification for water monitoring equipment is still relatively new. Although it is mandatory for industry regulated under the Environmental Permitting Regulations, it is not yet a compulsory requirement for all environmental measurements. The MCERTS performance standard covers a range of determinants for continuous water monitors including some of the most important parameters when monitoring effluents from wastewater treatment

works, industrial processes and the aquatic environment. The list of determinants includes ammonia, COD, conductivity, nitrates and pH and it is essential that their levels are controlled correctly.

The MCERTS performance standard for continuous water monitors has been based on relevant sections of national and international ISO and CEN standards. The EU environmental technology verification scheme (ETV) proposes to include MCERTS and water monitoring systems in the initial scope. In addition, work is progressing with CEN and ISO committees to use MCERTS as the benchmark standard.

Achieving MCERTS Certification

Within the instrumentation industry, there are numerous certifications that can act as barriers to entry. Many countries have implemented schemes similar to MCERTS and companies in this sector hope that MCERTS will help towards the creation of Europe-wide standards, which will promote trade between European countries. SIRA Environmental manages the MCERTS product certification on the EA's behalf. During the process of gaining MCERTS certification, a certification committee is assigned to each project which comprises independent technical experts. The committee provides guidance and technical judgement, helping to review the information that has been submitted to make sure that the equipment meets the performance standards. The committee assesses all existing test data, highlighting gaps and deciding which tests should be carried out.

To achieve certification, the manufacturer works directly with a third-party test house for laboratory testing to take place where existing evidence is not available. This is used to determine performance characteristics, where such testing requires a highly controlled environment. At Analytical Technology, for example, a field trial was initiated at a customer site at the Royal Mint and was carried out on processes representative of the intended industrial sectors and applications. Alongside the testing processes SIRA Environmental conducted an audit at the manufacturing site to confirm reproducibility and ensure that the company can control any design changes. This makes certain that performance is not degraded below the MCERTS standard. The manufacturing systems and final product checks were all tested and ongoing surveillance audits will take place on an annual basis.

The final stage of the MCERTS certification process for companies in the water industry involves reviewing all data that has been generated by the laboratory testing, field trials and manufacturing site audit. Once the evidence has been assessed, the final evaluation is submitted to the certification committee for final review and approval. MCERTS brings standardisation to water treatment control and will enable customers to have confidence that the instruments they purchase will provide them with the reliable data they require.

Analytical Technology's MCERTS-certified products

Analytical Technology has achieved MCERTS certification for its Q45P Auto-Clean pH monitor, which is designed for use in all industrial and municipal applications. The differential pH sensors utilize a sealed glass reference system providing protection from chemical poisons that destroy traditional pH sensors. A large electrolyte volume, dual junction saltbridge is used to maximize the in-service time of the sensors and minimize contamination of the reference solution. The replaceable saltbridge also allows for easy and inexpensive sensor regeneration.



The Advantages of MCERTS

MCERTS provides organisations and customers with independent evidence that products are first-class. Through the comprehensive process of laboratory testing, field trials and manufacturing site audits, the certification ensures that equipment serves its pre-stated purpose. It validates claims made by manufacturers, while also achieving the aim of the EA to protect the environment by reliably controlling effluents.

Achieving MCERTS certification offers a number of benefits to manufacturers. There is a clear marketing advantage as products can be advertised with the MCERTS logo, increasing confidence among customers and helping to generate new sales. The certification also boosts company confidence as it is encouraging to have third party recognition of product quality. Achieving MCERTS can also increase the confidence of employees and customers.

By selecting a manufacturer that supplies MCERTS-certified products, customers can be confident that the instrumentation they purchase is capable of constantly producing quality, precise measurements to the level that the EA requires. The certification demonstrates to customers that products are of superior quality, requiring no or little maintenance, allowing for less downtime, no retreatment or effluent and increased life expectancy.

Company Investment

Appointing a service provider to conduct a field trial of a product over a three month period can cost between £10K and £15K. The way in which Analytical Technology undertook its MCERTS certification provides a good example of how to reduce these costs. Prior to the MCERTS certification the company already constantly evaluated its products and these records helped the company to produce testing evidence, avoiding the need for new external evaluation. In this way, certification costs can be lowered for companies who have implemented good practices of self-evaluation. Without the assistance of the customer site for the field trial, however, additional costs would have been incurred to generate the testing data. Undertaking the MCERTS certification has encouraged Analytical Technology to continue collecting field data in a rigorous way so that MCERTS certifications for future product ranges can be reduced.

Final Thoughts

For companies within the UK water industry the introduction of the MCERTS scheme is a vital step towards national standardisation. It provides a key tool for prompting manufacturers to maintain proper documentation relating to effluents. As the scheme is taken up by more and more organizations, it is hoped that MCERTS will become a recognised standard across Europe, removing trade barriers and facilitating export from UK manufacturers.

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