

Flow Monitoring for discharge consent compliance (inc. MCERTS)

Duration: 2 days

Synopsis

This Course provides an introduction to the requirements of the MCERTs procedures for auditing of flow monitoring installations to verify effluent discharges. It is intended for prospective MCERTs inspectors, designers of discharge monitoring installations, those responsible for implementing contracts for MCERTs services and managers of effluent discharge monitoring facilities. An introduction to the Urban Wastewater Treatment Directive and MCERTS, is followed by basic hydraulic theory and instruction on flow measurement equipment. The issues of compliance and uncertainty are presented along with a summary of the key issues for preparing certification reports. Skills are consolidated with half a day of fieldwork, either at a suitable location or incorporated into the practical exercises.

Prerequisites

No prior knowledge of flow measurement or discharge consent compliance is assumed but some basic knowledge of open channel hydraulics would be an advantage.

Outcomes

After taking this course, delegates should understand the key principles of flow measurement relevant to the monitoring of effluent discharges, the problems and uncertainties associated with different techniques and the requirements of the MCERTS process. They should also be able to review discharge installations and make an initial assessment of whether they comply with the legal framework.

Content

This course describes the process of ensuring that discharge of liquid waste complies with the legislative requirements, enforced in England and Wales by the Environment Agency using MCERTS certification. Since the monitoring and assessment process covers flow control structures and instrumentation, the course teaches elements of basic hydraulic theory and techniques of flow measurement in open channels and pipes. Equations for estimating flow through weirs and flumes are presented, together with associated uncertainties and relevant case studies. This course describes all aspects of the MCERTS inspection process and the key factors that are used in compliance assessment. The "field" exercise consolidates key skills and is followed by preparation of the main elements of a report.

The course programme covers:

- Background to the MCERTS process including the Urban Wastewater Treatment Directive
- Introduction to flow measurement
- Introduction to basic hydraulic theory with particular reference to flows in open channels, pipes and flow measurement structures.
- Weirs and flumes (primary devices) for flow measurement, including formulae and uncertainty analysis
- Electromagnetic pipeflow meters
- Water level measurement (secondary devices)
- Velocity-area techniques, including acoustic technologies
- Key factors in compliance assessment
- The inspection process
- Certification report contents

Tuition uses a hands-on approach, with no more than six participants per tutor. The main features of each topic are explained using a projector, after which participants are given appropriate exercises to consolidate their skills.