MCERTS Bulletin 8 – Data treatment/telemetry error

MCERTS requires that total daily volume be measured with a target uncertainty of ±8% or better including any data treatment/telemetry error.

The MCERTS Inspector is required to include in the Site Inspection Report the maximum uncertainty associated with data treatment/telemetry (where applicable) and add this figure, in quadrature, to the uncertainty associated with the flow monitoring equipment (primary and secondary device).

MCERTS Inspectors examine the site process configuration, primary and secondary device during the site assessment. Data treatment/telemetry arrangements are assessed by auditing the site Operator's Management System (MS).

It would seem logical therefore, for site Operators, to define and record in their MS the maximum acceptable data treatment/telemetry error and for the MCERTS Inspector to use this figure for all Inspection reports prepared for that site Operator. The site operator's MS arrangements would then ensure that the defined figure is maintained.

Of course, if the uncertainty associated with the primary and secondary device is ±5%, a 2% data treatment/telemetry error will only contribute<0.4% to the overall uncertainty, so some pragmatism will be required when addressing this.

For example

$$U = \sqrt{U^2_c + U^2_t}$$

$$U = \sqrt{5^2 + 2^2}$$

$$U = \sqrt{25 + 4}$$

$$U = \sqrt{29}$$

$$U = 5.385\%$$

Where:

U = total uncertainty

U_c = uncertainty associated with the flow monitoring equipment (in total daily volume)

U_t = uncertainty associated with data treatment/telemetry

Where possible MCERTS Inspectors should confirm operation of the telemetry system, by contacting the appropriate control room or data team and comparing the reported value to the local measurement. (This might not be possible at some locations due to poor phone coverage.) Any significant differences should be highlighted in the Site Inspection Report along with an explanation.