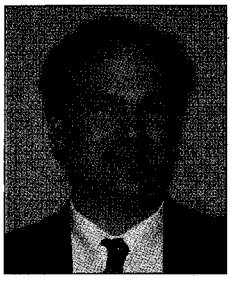
GUEST DIALOG

By Robert Davis

THE COST OF INACCURATE CEM CALIBRATION GASES



Utility companies and other users of continuous emissions monitoring (CEM) calibration gases often mistakenly consider them a commodity, making price the primary purchase consideration. Consequently, many are willing to settle for calibration gases that are less accurate than premium calibration gases, as long as they are also less expensive.

But many companies are beginning to see that buying less expensive and potentially inaccurate CEM calibration gases may, ironically, lead to losing hundreds of thousands or even millions of dollars! This can happen because the use of inaccurate calibration gases often leads to the overstatement of emissions that could otherwise be claimed as valuable emission credits, which are currently trading at values ranging from $700 to $2,500 per ton.

For instance, if a company uses a calibration gas mixture that has been inaccurately manufactured and certified with a 100-ppm tag value, but in reality contains only 96 ppm, that company would unwittingly calibrate its CEM incorrectly, and overstate its emission levels. Such inaccurate calibration could eventually lead to tons of lost emission credits that could have been sold, banked for future use, or traded for significant dollars. Now, they are lost forever.

Accurate CEM calibration gases not only allow companies to comply with EPA standards, but ultimately save significant amounts of money in emission credits that might otherwise have been lost.

Failing to measure up

EPA regulations, as stated in the Clean Air Act of 1990, require that protocol gases used to calibrate CEMs for nitric oxide or SO_2 emissions be within ±2 percent of the accuracy value as stated by the manufacturer on the mixture's certificate of analysis, or tag to comply with the EPA-mandated 7-day drift test. However, in a recent EPA blind audit, in which three cylinders of calibration gases were bought from 14 different specialty gas manufacturers, it was found that six of the 14 vendors failed to comply with the ±2 percent accuracy requirement. The inaccuracies, in fact, ranged from 2 percent to as high as 8 percent.

If the CEM error rate due to calibration was between 2 and 8 percent, then America's acid rain utilities could be overstating emissions by 82,050 to 328,203 tons of SO_2 each year. With the SO_2 current market value at $700 per ton, this results in $57,435,000 to $229,742,100 of lost potential emission credits this year – with the utility companies that use unacceptably inaccurate calibration gases, such as those produced by the 43 percent of vendors who failed the blind audit, bearing much of that loss.

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The cost of inaccuracy

In order to fully understand the significance of these numbers, imagine a utility company with a total SO_2 Allowance Trading System, or ATS, credit of 400,000 tons for one year, but which also used calibration gases that were actually 2 percent higher than the tag value. That company would likely be overstating emissions by 8,000 tons (400,000 tons times 2 percent), which, at a value of $700/ton, means it would be losing over $5 million in allowance credits. Companies using calibration gases bought from vendors who failed the blind audit, and whose gases therefore exceed the 2 percent accuracy requirement, stand to lose even more.

Such a gross loss of potential trading credits clearly overshadows the higher initial cost of accurate CEM calibration gases. This year's blind audit revealed the scope of the problem of inaccurate gases, and utility companies would do well to take notice. The companies could not see the difference because they calibrated their CEMs based on the tag values of these calibration gases. And because the inaccuracy is only detectable after an EPA-mandated annual or semi-annual Relative Accuracy Test Audit, or RATA, even if engineers are aware of a problem occurring, companies could spend months without fixing it. After all, the measuring stick's the last thing you would suspect.

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