§ 1065.675 CLD quench verification calculations.

Perform CLD quench-check calculations as follows:

(a) Perform a CLD analyzer quench verification test as described in §1065.370.

(b) Estimate the maximum expected mole fraction of water during emission testing, $x_{H2Oexp}$. Make this estimate where the humidified NO span gas was introduced in §1065.370(e)(6). When estimating the maximum expected mole fraction of water, consider the maximum expected water content in combustion air, fuel combustion products, and dilution air (if applicable). If you introduced the humidified NO span gas into the sample system upstream of a sample dryer during the verification test, you need not estimate the maximum expected mole fraction of water and you must set $x_{H2Oexp}$ equal to $x_{H2Omeas}$.

(c) Estimate the maximum expected $CO_2$ concentration during emission testing, $x_{CO2exp}$. Make this estimate at the sample system location where the blended NO and $CO_2$ span gases are introduced according to §1065.370(d)(10). When estimating the maximum expected $CO_2$ concentration, consider the maximum expected $CO_2$ content in fuel combustion products and dilution air.

(d) Calculate quench as follows:

$$quench = \left( \frac{X_{NOwet}}{X_{NOdry}} \right) \cdot \frac{X_{H2Oexp}}{1 - X_{H2Omeas}} \cdot \frac{X_{NOmeas}}{X_{NOact}} \cdot \frac{1}{1} \cdot 100\%$$

Eq. 1065.675-1

Where:

$X_{NOwet} =$ concentration of NO upstream of a bubbler, according to §1065.370(e)(4).

$X_{NOdry} =$ amount of CLD quench.
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§ 1065.690 Buoyancy correction for PM sample media.

(a) General. Correct PM sample media for their buoyancy in air if you weigh them on a balance. The buoyancy correction depends on the sample media density, the density of air, and the density of the calibration weight used to calibrate the balance. The buoyancy correction does not account for the buoyancy of the PM itself, because the mass of PM typically accounts for only (0.01 to 0.10)% of the total weight. A correction to this small fraction of mass would be at the most 0.010%.

(b) PM sample media density. Different PM sample media have different densities. Use the known density of your