§ 1065.275 N₂O measurement devices.

(a) General component requirements. We recommend that you use an analyzer that meets the specifications in Table 1 of §1065.205. Note that your system must meet the linearity verification in §1065.307. You may use a analyzer that has compensation algorithms that are functions of other gaseous measurements and the engine’s known or assumed fuel properties. The target value for any compensation algorithm is 0.0% (that is, no bias high and no bias low), regardless of the uncompensated signal’s bias.

(b) Component requirements. We recommend that you use an NDUV analyzer that meets the specifications in Table 1 of §1065.205. Note that your NDUV-based system must meet the verifications in §1065.372 and it must also meet the linearity verification in §1065.307. You may use a analyzer that has compensation algorithms that are functions of other gaseous measurements and the engine’s known or assumed fuel properties. The target value for any compensation algorithm is 0.0% (that is, no bias high and no bias low), regardless of the uncompensated signal’s bias. Use appropriate analytical procedures for interpretation of infrared spectra. For example, EPA Test Method 320 is considered a valid method for spectral interpretation (see http://www.epa.gov/ttn/enc/methods/method320.html).

(c) NO₂-to-NO converter. If your NDUV analyzer measures only NO, place up-stream of the NDUV analyzer an internal or external NO₂-to-NO converter that meets the verification in §1065.378. Configure the converter with a bypass to facilitate this verification.

(d) Humidity effects. You must maintain NDUV temperature to prevent aqueous condensation, unless you use one of the following configurations:

(1) Connect an NDUV downstream of any dryer or chiller that is downstream of an NO₂-to-NO converter that meets the verification in §1065.378.

(2) Connect an NDUV downstream of any dryer or thermal chiller that meets the verification in §1065.378.

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concentration), which you then multiply by the area counts from your sample to generate the sample concentration.

(c) Interference validation. Perform interference validation for NDIR, FTIR, and photoacoustic analyzers using the procedures of §1065.375. Interference validation is not required for GC–ECD. Certain interference gases can positively interfere with NDIR, FTIR, and photoacoustic analyzers by causing a response similar to N\textsubscript{2}O. When running the interference verification for these analyzers, use interference gases as follows:

(1) The interference gases for NDIR analyzers are CO, CO\textsubscript{2}, H\textsubscript{2}O, CH\textsubscript{4}, and SO\textsubscript{2}. Note that interference species, with the exception of H\textsubscript{2}O, are dependent on the N\textsubscript{2}O infrared absorption band chosen by the instrument manufacturer and should be determined independently for each analyzer.

(2) Use good engineering judgment to determine interference gases for FTIR. Note that interference species, with the exception of H\textsubscript{2}O, are dependent on the N\textsubscript{2}O infrared absorption band chosen by the instrument manufacturer and should be determined independently for each analyzer.

(3) The interference gases for photoacoustic analyzers are CO, CO\textsubscript{2}, and H\textsubscript{2}O.

[74 FR 56512, Oct. 30, 2009]

O\textsubscript{2} MEASUREMENTS

§ 1065.280 Paramagnetic and magnetopneumatic O\textsubscript{2} detection analyzers.

(a) Application. You may use a paramagnetic detection (PMD) or magnetopneumatic detection (MPD) analyzer to measure O\textsubscript{2} concentration in raw or diluted exhaust for batch or continuous sampling. You may use O\textsubscript{2} measurements with intake air or fuel flow measurements to calculate exhaust flow rate according to §1065.650.

(b) Component requirements. We recommend that you use a PMD or MPD analyzer that meets the specifications in Table 1 of §1065.205. Note that your PMD-based system must meet the linearity verification in §1065.307. If the balance uses internal calibration weights for routine spanning and linearity verifications, the calibration weights must meet the specifications in §1065.790. While you may also use an inertial balance to measure PM, as described in §1065.295, use a reference procedure based on a gravimetric balance for comparison with any proposed alternate measurement procedure under §1065.10.