UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

JUN 28 2012

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

Mr. John T. Connolly
Energy Resource Development, Incorporated
19345 Point O Woods Court
Baton Rouge, LA 70809

Dear Mr. Connolly:

This is in response to your April 2, 2012 letter, where you asked to use alternative procedures in Method 7E for analyzers that measure nitric oxide (NO) and nitrogen dioxide (NO_2) in determining nitrogen oxides (NO_x) emissions from stationary internal combustion engines. Method 7E of Appendix A to 40 CFR Part 60 requires a 3-point calibration of these analyzers using NO and NO_2 protocol gases.

You believe this requirement is impractical for sources like rich burn engines where NO_2 levels are routinely very low or nondetectable. You have found that protocol gases at these levels are also either cost prohibitive or unavailable, and full analyzer calibration to measure zero emissions is unnecessary. You ask for a waiver of calibration in these cases and propose your instrument's auto zero capability as an indicator to trigger a full calibration if concentrations increase. As an alternative to the auto zero capability, you ask that a single calibration point be allowed for these tests. You also request that the calibration error, sampling system bias, and drift tests be waived for the NO_2 fraction of NO_x under these conditions since the test limits would be difficult to meet.

For these very low concentrations, you ask for clarification on whether a protocol NO calibration gas containing small amounts of NO_2 that is certified by the manufacturer is acceptable for use as an NO_2 calibration point. You note that this is already addressed and allowed for dual-measurement analyzers like yours in the Method 7E questions and answers on the EPA website, but you believe confusion still exists. Finally, you ask if daily instrument calibration is required or if passing the calibration error test acceptably verifies the calibration.

The information we've reviewed on rich burn engines generally supports your claim that they emit very little NO_2. This may justify a partial calibration for NO_2 as long as levels remain very low or undetectable. However, engines that are classified as rich-burns may be retuned in the field to operate otherwise. Therefore, an alternative allowance covering all rich burn engines may not be warranted without an initial verification of NO_2 levels. You have found a 10 ppm NO_2 protocol gas which you ask to be used for a single-point calibration. You would use this or an NO gas containing a certified amount of NO_2 as noted earlier.

We do not have enough information on your instrument's auto zero capability to approve its use as a trigger for full calibration. However, a single certified point may be sufficient to document periods of continuous low concentrations. Method 7E does not address the calibration issues and analyzer performance capabilities at very low NO_2 concentrations. All calibration gases are expected to be protocol quality and a calibration range should be chosen that results in measurements between 20 to 100 percent of the calibration span when practicable. Choosing a higher calibration span to achieve the data quality objective of showing compliance is also allowed; however, higher levels would result in lower

measurement accuracy. For these reasons, we believe an alternative allowance is justified, and your use of the 10 ppm protocol gas as a single calibration point at rich-burn engines exhibiting consistently low NO_2 emissions is a feasible alternative to full calibration.

Therefore, we are approving your request to use a 10 ppm calibration gas as a single calibration point at rich burn engines where the NO_2 emissions remain low. Other gases that are vendor-certified for NO_2 in the 10 ppm or less range may also be used. For this alternative approval, a full 3-point calibration of the analyzer using protocol quality gas is required whenever the measured NO_2 concentration exceeds 10 ppm. The 3-point analyzer calibration error, sampling system bias, and drift tests are waived for NO_2 while in single-point calibration mode.

Concerning the daily calibration of analyzers, Method 7E is a performance-based method and relies on the calibration error test to ensure the calibration is within acceptable bounds. Therefore, instrument calibration is left to the discretion of the tester and is not required daily if the analyzer calibration error tests are within acceptable limits.

This alternative method approval is granted for testing internal combustion engines burning natural gas and regulated under Subpart JJJJ of 40 CFR Part 60. Since this approval is applicable to other facilities wishing to use these options, we will be posting this letter on our web site at http://www.epa.gov/ttn/emc/approalt.html for use by other interested parties.

If you have further questions in this matter, please contact Foston Curtis of my group at (919)541-1063.

Sincerely,

Conniesue B. Oldham, Ph.D., Group Leader
Measurement Technology Group

cc: Foston Curtis, MTG (curtis.foston@epa.gov)
Tony Robledo, Region 6 (robledo.tony@epa.gov)
John Smith, TCEQ (John.Smith@tceq.texas.gov)