§ 89.314 Pre- and post-test calibration of analyzers.

Each operating range used during the test shall be checked prior to and after each test in accordance with the following procedure. (A chronic need for parameter adjustment can indicate a need for instrument maintenance.):

(a) The calibration is checked by using a zero gas and a span gas whose nominal value is between 75 percent and 100 percent of full-scale, inclusive, of the measuring range.

(b) After the end of the final mode, a zero gas and the same span gas will be used for rechecking. As an option, the zero and span may be rechecked at the end of each mode or each test segment. The analysis will be considered acceptable if the difference between the two measuring results is less than 2 percent of full scale.

§ 89.315 Analyzer bench checks.

(a) Prior to initial use and after major repairs verify that each analyzer complies with the specifications given in Table 3 in appendix A of this subpart.

(b) If a stainless steel NO\textsubscript{2} to NO converter is used, condition all new or replacement converters. The conditioning consists of either purging the converter with air for a minimum of 4 hours or until the converter efficiency is greater than 90 percent. The converter must be at operational temperature while purging. Do not use this procedure prior to checking converter efficiency on in-use converters.

§ 89.316 Analyzer leakage and response time.

(a) Vacuum side leak check. (1) Any location within the analysis system where a vacuum leak could affect the test results must be checked.

(b) After the end of the final mode, a zero gas and the same span gas will be used for rechecking. As an option, the zero and span may be rechecked at the end of each mode or each test segment. The analysis will be considered acceptable if the difference between the two measuring results is less than 2 percent of full scale.

§ 89.317 NO\textsubscript{X} converter check.

(a) Prior to its introduction into service, and monthly thereafter, the chemiluminescent oxides of nitrogen analyzer shall be checked for NO\textsubscript{2} to NO converter efficiency. Figure 2 in appendix B of this subpart is a reference for the following paragraphs.

(b) Follow good engineering practices for instrument start-up and operation. Adjust the analyzer to optimize performance.

(c) Zero the oxides of nitrogen analyzer with zero-grade air or zero-grade nitrogen.

(d) Connect the outlet of the NO\textsubscript{X} generator to the sample inlet of the oxides of nitrogen analyzer which has been set to the most common operating range.

(e) Introduce into the NO\textsubscript{X} generator an NO-in-nitrogen (N\textsubscript{2}) mixture with an NO concentration equal to approximately 80 percent of the most common operating range. The NO\textsubscript{2} content of the gas mixture shall be less than 5 percent of the NO concentration.

(f) With the oxides of nitrogen analyzer in the NO mode, record the concentration of NO indicated by the analyzer.

(g) Turn on the NO\textsubscript{X} generator O\textsubscript{2} (or air) supply and adjust the O\textsubscript{2} (or air) flow rate so that the NO indicated by the analyzer is about 10 percent less than indicated in paragraph (f) of this section. Record the concentration of NO in this NO+O\textsubscript{2} mixture.