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Method 20—Determination of Nitrogen Oxides and Sulfur Dioxide Emissions From Stationary Gas Turbines**1.0 Scope and Application****What Is Method 20?**

Method 20 contains the details you must follow when using an instrumental analyzer

to determine concentrations of nitrogen oxides, oxygen, and sulfur dioxide in the emissions from stationary gas turbines. This method refers to other methods for specific instructions for equipment and performance requirements, supplies, sample collection and analysis, calculations, and data analysis. All methods that are referenced are in appendix A of 40 CFR part 60.

1.1 Analytes. *What does this method determine?*

Analyte	CAS No.	Sensitivity
Nitrogen oxides (NO _x) as nitrogen dioxide	See section 1.3 of Method 7E.
Nitric oxide (NO)	10102-43-9	
Nitrogen dioxide (NO ₂)	10102-44-0	
Diluent oxygen (O ₂) or carbon dioxide (CO ₂)	See section 1.3 of Method 3A.
Sulfur dioxide (SO ₂)	7446-09-5	See section 1.3 of Method 6C.

1.2 Applicability. *When is this method required?* Method 6C is required in specific New Source Performance Standards, Clean Air Marketing rules, and State Implementation Plans and permits where measuring SO₂ concentrations in stationary source emissions is required. Other regulations may also require its use.

1.3 Data Quality Objectives. Refer to section 1.3 of Method 7E.

2.0 Summary of Method

In this method, NO_x, O₂ (or CO₂), and SO₂ are measured using the following methods:

Method 1—Sample and Velocity Traverses for Stationary Sources.

(a) Method 7E—Determination of Nitrogen Oxides Emissions From Stationary Sources (Instrumental Analyzer Procedure).

(b) Method 3A—Determination of Oxygen and Carbon Dioxide Emissions From Stationary Sources (Instrumental Analyzer Procedure).

(c) Method 6C—Determination of Sulfur Dioxide Emissions From Stationary Sources (Instrumental Analyzer Procedure).

3.0 Definitions

Refer to section 3.0 of Method 7E.

4.0 Interferences [Reserved]**5.0 Safety**

Refer to section 5.0 of Method 7E.

6.0 Equipment and Supplies

The measurement system design is shown in Figure 20-1. Refer to the appropriate

methods listed in section 2.0 for equipment and supplies.

7.0 Reagents and Standards

Refer to the appropriate methods listed in section 2.0 for reagents and standards.

8.0 Sample Collection, Preservation, Storage, and Transport**Emission Test Procedure**

8.1 Sampling Site and Sampling Points. You must follow section 8.1 of Method 7E.

8.2 Measurement System Performance Tests. You must follow the Calibration Gas Verification, Measurement System Preparation, Analyzer Calibration Error Test, NO₂ to NO Conversion Efficiency Test (as applicable), Initial Sampling System Bias Check, System Response Time.

8.3 Sample Collection. Follow section 8.4 of Method 7E.

8.4 Post-Run Sampling System Bias Check and Alternative Dynamic Spike Procedure. Follow sections 8.5 and 8.6 of Method 7E.

9.0 Quality Control

Follow quality control procedures in section 9.0 of Method 7E.

10.0 Calibration and Standardization

Follow the procedures for calibration and standardization in section 10.0 of Method 7E.

11.0 Analytical Procedures

Because sample collection and analysis are performed together (see section 8), additional discussion of the analytical procedure is not necessary.

12.0 Calculations and Data Analysis

You must follow the procedures for calculations and data analysis in section 12.0 of the appropriate method listed in section 2.0.

13.0 Method Performance

13.1 The Analytical Range, Sensitivity, System Response and Minimum Sampling Times, Analyzer Calibration Error, Sampling System Bias, NO₂ to NO Conversion Efficiency Test (as applicable), Interference Check, and Alternative Dynamic Spike Check specifications are the same as in section 13.0 of Method 7E.

14.0 Pollution Prevention [Reserved]**15.0 Waste Management [Reserved]****16.0 Alternative Procedures**

Refer to section 16.0 of the appropriate method listed in section 2.0 for alternative procedures.

17.0 References

Refer to section 17.0 of the appropriate method listed in section 2.0 for references.

18.0 Tables, Diagrams, Flowcharts, and Validation Data

In addition to Figure 20-1, refer to section 18.0 of the appropriate method listed in section 2.0 for tables, diagrams, flowcharts, and validation data.

BILLING CODE 6560-50-P