

Missouri Department of dnr.mo.gov

NATURAL RESOURCES

Eric R. Greitens, Governor

Carol S. Comer, Director

FEB 20 2018

Mr. Blake Pinkerton
Environmental Analyst II
Essex Power Plant
2814 S. Golden Ave, P.O. Box 754
Springfield, MO 65801

RE: New Source Review Permit Amendment - Permit Number: 122016-005A
Project Number: 2017-03-074; Installation Number: 207-0064

Dear Mr. Pinkerton:

Per your request, the Missouri Air Pollution Control Program is amending Construction Permit 122016-005 to allow for alternate monitoring and recordkeeping. The Air Pollution Control Program issued Construction Permit 122016-005 on December 16, 2016. In Construction Permit 122016-005, the Air Pollution Control Program authorized the increased usage of EP-01 Combustion Turbine. EP-01 is a 100 MW lean-premix (also known as dry low NO_x) simple cycle stationary natural gas combustion turbine constructed in 1998 under Construction Permit 0998-022. In Construction Permit 0998-022, the Air Pollution Control Program erroneously assumed Essex Power Plant was a named source under §52.21(b)(1)(i)(a) and gave the installation a synthetic minor NSR limit of 100 tons per year.

It was later determined in Construction Permit 122016-005 that Essex Power Plant is not a named source under §52.21(b)(1)(i)(a); therefore, the installation's major source threshold is 250 tons per year. Combustion turbines are a stationary source category which was regulated by 40 CFR Part 60, Subpart GG prior to August 7, 1980; therefore, the installation is a named source under §52.21(b)(1)(iii)(aa) and fugitive emissions are counted towards major source applicability. As the installation's major source threshold is 250 tons per year, Construction Permit 122016-005 allowed the installation to increase their synthetic minor NSR limit from 100 tons per year to 250 tons per year. The installation was required to undergo PM₁₀, PM_{2.5}, CO, and NO_x modeling as the emissions increases of each pollutant exceeded their respective de minimis levels. The results of the September 8, 2016 PM₁₀ and PM_{2.5} modeling memo for Construction Permit 122016-005 indicate that based on the emission rates and stack parameters in Table 1, EP-01 Combustion Turbine did not exceed the significance levels on a 24-hour and annual basis.



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Table 1: September 8, 2016 Modeling Memo Emission Rates and Stack Parameters

Easting	Northing	Elevation	PM ₁₀ & PM _{2.5} Emission Rate (lb/hr)	Stack Height (ft)	Stack Temperature (°F)	Exit Velocity (ft/min)	Stack Diameter (ft)
781752.61	4084954.96	91.78	15.00	50	987	5,184	21.66

The results of the August 22, 2016 CO and NO_x modeling memo for Construction Permit 122016-005 indicate that based on the CO emission rates and stack parameters in Table 2, EP-01 Combustion Turbine did not exceed CO significance levels on a 1-hour and 8-hour basis.

Table 2: August 22, 2016 Modeling Memo CO Emission Rates and Stack Parameters

Easting	Northing	Elevation	CO Emission Rate 100% Load (lb/hr)	Stack Height (ft)	Stack Temperature (°F)	Exit Velocity (ft/min)	Stack Diameter (ft)
781752.61	4084954.96	91.78	59.4	50	987	5,184	21.66
Easting	Northing	Elevation	CO Emission Rate 75% Load (lb/hr)	Stack Height (ft)	Stack Temperature (°F)	Exit Velocity (ft/min)	Stack Diameter (ft)
781752.61	4084954.96	91.78	47.5	50	1,021	4,260	21.66

The results of the August 22, 2016 CO and NO_x modeling memo for Construction Permit 122016-005 indicate that based on the NO_x emission rates and stack parameters in Table 3, EP-01 Combustion Turbine did not exceed the NO_x significance levels on an annual basis and had an insignificant impact on violating NO_x receptors on a 1-hour basis.

Table 3: August 22, 2016 Modeling Memo NO_x Emission Rates and Stack Parameters

Easting	Northing	Elevation	NO _x Emission Rate 100% Load (lb/hr)	Stack Height (ft)	Stack Temperature (°F)	Exit Velocity (ft/min)	Stack Diameter (ft)
781752.61	4084954.96	91.78	149.2	50	987	5,184	21.66
Easting	Northing	Elevation	NO _x Emission Rate 75% Load (lb/hr)	Stack Height (ft)	Stack Temperature (°F)	Exit Velocity (ft/min)	Stack Diameter (ft)
781752.61	4084954.96	91.78	119.3	50	1,021	4,260	21.66

If future stack testing indicates emission rates higher than those used in the September 8, 2016 and August 22, 2016 models, Essex Power Plant shall submit new modeling to demonstrate continued compliance with ambient air quality standards.

In order to demonstrate compliance with their synthetic minor CO and NO_x limits of 250 tons per year, Construction Permit 122016-005 required the installation to conduct stack testing every five years to establish CO and NO_x emission factors. The installation has requested to instead use the procedures in 40 CFR Part 75 Appendix E to determine their NO_x emissions. Per §75.12(d)(2), the procedures in 40 CFR Part 75 Appendix E may only be used by peaking units as defined by §72.2. If EP-01 Combustion Turbine does not meet the definition of peaking unit at

Table 5: Construction Permit 122016-005A Individual HAP Emissions Summary (tons per year)

Individual HAP	SMAL	Existing Potential Emissions	Existing Actual Emissions (2015 EIQ)	Installation Unconditioned Potential Emissions	Installation Conditioned Potential Emissions
Formaldehyde (50-00-0)	2	N/D	0.29	4.10	1.99
Toluene (108-88-3)	10	N/D	N/D	0.75	N/D
Xylene (1330-20-7)	10	N/D	N/D	0.37	N/D
Propylene Oxide (75-56-9)	5	N/D	N/D	0.34	N/D
Acetaldehyde (75-07-0)	9	N/D	N/D	0.23	N/D
Ethylbenzene (100-41-4)	10	N/D	N/D	0.19	N/D
Benzene (71-43-2)	2	N/D	N/D	0.07	N/D
Acrolein (107-02-8)	0.04	N/D	N/D	0.04	N/D
Polycyclic Organic Matter	0.01	N/D	N/D	0.013	N/D
Naphthalene (91-20-3)	10	N/D	N/D	<0.01	N/D
1,3-Butadiene (106-99-0)	0.07	N/D	N/D	<0.01	N/D

The installation shall submit a signification modification application to update their Part 70 operating permit as required by Construction Permit 122016-005 by no later than December 16, 2017.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.ao.mo.gov/ahc.

§72.2 then §75.12(a) requires the use of a NO_x CEMS. Special Condition 2 of this amendment contains a revised synthetic minor NO_x limit which allows for the use of 40 CFR Part 75 Appendix E as long as EP-01 meets the definition of peaking unit at §72.2 and requires the use of NO_x CEMS if EP-01 does not meet the definition of peaking unit at §72.2.

The installation has requested to track their CO emissions in a similar manner to their NO_x emissions. Special Condition 4 contains revised CO monitoring and recordkeeping provisions.

In Construction Permit 122016-005, the installation should have accepted a practically enforceable limit of 2 tons per year on formaldehyde emissions or undergone formaldehyde modeling as the formaldehyde emissions increase exceeded the 2 tons per year formaldehyde SMAL. The Air Pollution Control Program erroneously omitted the formaldehyde limit from Construction Permit 122016-005. The formaldehyde limit is being included in this amendment as a 12-month rolling total heat input limit (see Special Condition 3.B). Based on the emission factor in AP-42 Table 3.1-3 (April 2000) of 7.1E-4 pounds of formaldehyde per MMBtu of heat input, the installation emits less than 2 tons of formaldehyde when combusting less than 5,610,000 MMBtu per 12-month rolling period.

The emissions summary associated with this project reflects the changes discussed above and is available in Tables 4 and 5. The Air Pollution Control Program based potential emissions on 8,760 hours of uncontrolled annual operation at 100% load unless otherwise indicated.

Table 4: Construction Permit 122016-005A Criteria Pollutant Emissions Summary (tons per year)

Pollutant	De Minimis Level	Existing Potential Emissions ¹	Existing Actual Emissions (2016 EIQ)	Installation Unconditioned Potential Emissions	Installation Conditioned Potential Emissions ²
PM	25	N/D	N/A	38.16	N/D
PM ₁₀	15	20.0	5.24	38.16	N/D
PM _{2.5}	10	N/D	5.24	38.16	N/D
SO _x	40	1.1	0.20	19.66	N/D
NO _x	40	<100	47.59	653.32	<250
VOC	40	38.7	0.85	12.14	N/D
CO	100	<100	0.84	5,139.84 ³	<250
Combined HAPs	25	0.03	0.29	6.11	N/D

¹ The Air Pollution Control Program obtained existing potential emissions from Construction Permit 0998-022A.

² The installation's conditioned potential emissions include the NO_x limit in Special Condition 2, the operational limitations in Special Condition 3, and the CO limit in Special Condition 4. These limits collectively both directly (in the case of NO_x and CO) and indirectly (in the case of formaldehyde) limit the installation's PTE.

³ The Air Pollution Control Program based potential emissions are on 8,760 hours operating at < 75% load. Potential emissions based on 8,760 hours operating at 100% load are 277.52 tons per year.

Mr. Pinkerton
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If you have any questions regarding this amendment, please do not hesitate to contact Alana Hess, at the department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

A handwritten signature in black ink that reads "Kendall B. Hale". The signature is written in a cursive style.

Kendall B. Hale
Permits Section Chief

KBH:alhj

Enclosures

c: Southeast Regional Office
PAMS File: 2017-03-074

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Permit No.	122016-005A
Project No.	2017-03-074

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

Essex Power Plant
Stoddard County, S26, T26N, R11E

1. Superseding Condition

The conditions of this permit supersede all of the special conditions found in the Construction Permits 0998-022, 0998-022A, and 122016-005 previously issued by the Air Pollution Control Program.

2. NO_x Emission Limitation

- A. Essex Power Plant shall emit less than 250 tons of NO_x in any consecutive 12-month period from EP-01 Combustion Turbine. This limit shall include NO_x emissions generated during start-up, shutdown, and malfunction periods.
- B. To demonstrate compliance with Special Condition 2.A, Essex Power Plant shall:
- 1.) Determine and record their hourly NO_x emission rates (lb/MMBtu) during each hour of operation by one of the following methods:
 - a.) If EP-01 Combustion Turbine does not meet the definition of peaking unit at §72.2, Essex Power Plant shall meet the general operating requirements in §75.10 for the operation of a NO_x CEMS and use the procedures in 40 CFR Part 75 Appendix F to determine their hourly NO_x emission rate (lb/MMBtu) during each hour of operation.
 - b.) If EP-01 Combustion Turbine meets the definition of peaking unit at §72.2, Essex Power Plant shall estimate hourly NO_x emissions using the procedures in 40 CFR Part 75 Appendix E.
 - 2.) Determine and record their hourly heat input (MMBtu/hr) using the procedures in Section 2.1.3 of 40 CFR Part 75 Appendix E during each hour of operation.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- 3.) Determine and record their hourly NO_x emission rate (lb/hr) by multiplying their hourly NO_x emission rate (lb/MMBtu) by their hourly heat input (MMBtu/hr) for each hour of operation.
- 4.) Determine and record their monthly NO_x emissions (tons) each month by summing all hourly NO_x emission rates (lb/hr) for the calendar month and multiplying by a conversion factor of 0.0005 tons/lb.
- 5.) Determine and record their 12-month rolling total NO_x emissions (tons) each month by summing all monthly NO_x emissions for the most recent 12-month period.

3. Operational Limitations

- A. Essex Power Plant shall combust only pipeline natural gas as defined by §72.2 in EP-01 Combustion Turbine.
- B. Essex Power Plant shall not combust more than 5,610,000 MMBtu of natural gas in any consecutive 12-month period in EP-01 Combustion Turbine. All natural gas combustion, including natural gas combustion during start-up, shutdown, and malfunction periods, shall be included in this limit.
- C. To demonstrate compliance with Special Condition 3.B, Essex Power Plant shall:
 - 1.) Determine and record their heat input (MMBtu) hourly as required by Special Condition 2.B.2.
 - 2.) Determine and record their heat input (MMBtu) monthly by summing all hourly heat inputs (MMBtu) for each hour of operation during the calendar month.
 - 3.) Determine and record 12-month rolling total heat input (MMBtu) each month by summing all monthly heat input (MMBtu) for the most recent 12 month period.

4. CO Limitation

- A. Essex Power Plant shall emit less than 250 tons of CO in any consecutive 12-month period from EP-01 Combustion Turbine. This limit shall include CO emissions generated during start-up, shutdown, and malfunction periods.
- B. To demonstrate compliance with Special Condition 4.A, Essex Power Plant shall:

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Permit No.	122016-005A
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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- 1.) Establish a CO Curve.
 - a.) Conduct CO emissions testing according to 40 CFR Part 60 Appendix A Method 10, or other Air Pollution Control Program approved method, at the same time as conducting NO_x emissions testing under 40 CFR Part 75 Appendix E.
 - b.) Convert CO concentrations (ppm) to CO emission rates (to the nearest 0.001 lb/MMBtu) according to equation 19-1 of 40 CFR Part 60 Appendix A Method 19.
 - c.) Calculate the CO emission rate in lb/MMBtu for each sampling point and determine the arithmetic average CO emission rate of each test run. Record the arithmetic average of the three test runs at each load level as the CO emission rate for that load.
 - d.) Plot the tabulated CO emission rates and 40 CFR Part 75 Appendix E heat input rates as an x-y graph. Plot the heat input rate (MMBtu/hr) as the independent (or x) variable and the CO emission rates (lb/MMBtu) as the dependent (or y) variable for each load point. Construct the graph by drawing straight-line segments between each load point. Draw a horizontal line to the y-axis from the minimum heat input (load) point.
- 2.) Determine and record their hourly CO emission rates (lb/MMBtu) during each hour of operation.
 - a.) Use the CO curve correlation to determine the CO emission rate (lb/MMBtu) corresponding to the heat input rate (MMBtu/hr) required to be determined by Special Condition 2.B.2.
- 3.) Determine and record their hourly CO emission rate (lb/hr) by multiplying their hourly CO emission rate (lb/MMBtu) by their hourly heat input (MMBtu/hr) for each hour of operation.
- 4.) Determine and record their monthly CO emissions (tons) each month by summing all hourly CO emission rates (lb/hr) for the calendar month and multiplying by a conversion factor of 0.0005 tons/lb.
- 5.) Determine and record their 12-month rolling total CO emissions (tons) each month by summing all monthly CO emissions for the most recent 12-month period.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

5. Performance Testing

- A. Essex Power Plant shall submit a completed Proposed Test Plan Form (enclosed) to the Air Pollution Control Program 30 days prior to their proposed CO and NO_x test date so that the Air Pollution Control Program may arrange a pretest meeting, if necessary, and assure that the test date is acceptable for an observer to be present. The Proposed Test Plan may serve the purpose of notification and requires approval by the Director prior to conducting the required emission testing.
- B. Essex Power Plant shall submit one electronic copy of a written report of the performance test results to StackTesting@dnr.mo.gov within 60 days of completion of any required testing. The report shall include legible copies of the raw data sheets, analytical instrument laboratory data, and complete sample calculations from the required U.S. EPA Method for at least one sample run.
- C. The test report is to account fully for all operational and emission parameters addressed both in the permit conditions as well as in any other applicable state or federal rules or regulations.

6. Record Keeping and Reporting Requirements

- A. Essex Power Plant shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.
- B. Essex Power Plant shall report to the Air Pollution Control Program's Compliance/Enforcement Section, by mail at P.O. Box 176, Jefferson City, MO 65102 or by email at AirComplianceReporting@dnr.mo.gov, no later than 10 days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

2017-03-074 AECl - Essex (207-0064)
Installation Project PTE

Emission Unit	Description	MDHR	Units	Pollutant	Emission Factor	UOM factor	Source	PTE (lb/hr)	Unconditioned PTE (tpy)	Conditioned PTE (tpy)
EP-01	Lean Pre-mix Combustion Turbine	1320	MMBtu	CO	0.048	lb/MMBtu	> 75% Load, Preliminary 2017 Stack Test Results	63.36	277.52	250.00
		990	MMBtu	CO	1.27	lb/MMBtu	< 75% Load, AP-42 Section 3.1 Background Document Table 3.4-1	1,257.30	5,506.97	
		1320	MMBtu	NOx	0.113	lb/MMBtu	> 75% Load, Preliminary 2014 Stack Test Results	149.16	653.32	250.00
		990	MMBtu	NOx	0.132	lb/MMBtu	< 75% Load, Preliminary 2017 Stack Test Results	130.68	572.38	
		1320	MMBtu	PM10	6.60E-03	lb/MMBtu	AP-42 Table 3.1-2	8.71	38.16	18.51
		1320	MMBtu	PM25	6.60E-03	lb/MMBtu	AP-42 Table 3.1-2	8.71	38.16	18.51
		1320	MMBtu	SOx	3.40E-03	lb/MMBtu	AP-42 Table 3.1-2a footnote h	4.49	19.66	9.54
		1320	MMBtu	VOC	2.10E-03	lb/MMBtu	AP-42 Table 3.1-2	2.77	12.14	5.89
		1320	MMBtu	HAP	0.00105676	lb/MMBtu	Sum of individual HAPs	1.39	6.11	2.96
		1320	MMBtu	1,3-Butadiene	0.00000086	lb/MMBtu	AP-42 Table 3.1-3	0.00	0.00	0.00
		1320	MMBtu	Acetaldehyde	4.00E-05	lb/MMBtu	AP-42 Table 3.1-3	0.05	0.23	0.11
		1320	MMBtu	Acrolein	6.40E-06	lb/MMBtu	AP-42 Table 3.1-3	0.0084	0.04	0.02
		1320	MMBtu	Benzene	1.20E-05	lb/MMBtu	AP-42 Table 3.1-3	0.02	0.07	0.03
		1320	MMBtu	Ethylbenzene	3.20E-05	lb/MMBtu	AP-42 Table 3.1-3	0.04	0.19	0.09
		1320	MMBtu	Formaldehyde	7.10E-04	lb/MMBtu	AP-42 Table 3.1-3	0.94	4.10	1.99
		1320	MMBtu	Naphthalene	1.30E-06	lb/MMBtu	AP-42 Table 3.1-3	0.00	0.008	0.00
		1320	MMBtu	POM	2.20E-06	lb/MMBtu	AP-42 Table 3.1-3	0.00	0.013	0.01
		1320	MMBtu	Propylene Oxide	5.80E-05	lb/MMBtu	AP-42 Table 3.1-3	0.08	0.34	0.16
		1320	MMBtu	Toluene	1.30E-04	lb/MMBtu	AP-42 Table 3.1-3	0.17	0.75	0.36
1320	MMBtu	Xylene	6.40E-05	lb/MMBtu	AP-42 Table 3.1-3	0.08	0.37	0.18		
990	MMBtu	Benzene	1.03E-04	lb/MMBtu	< 75% Load, AP-42 Section 3.1 Background Document Table 3.4-1	0.10	0.45	0.01		

EP-01 is being limited to 250 tpy Nox to avoid PSD.

EP-01 is being limited to 5,610,000 MMBtu per year to reduce formaldehyde (below SMAL) emissions.

EP-01 is being limited to 250 tpy CO to avoid PSD.

Preliminary 2017 Stack Test Results

Heat Input (MMBtu/hr)	CO (lb/MMBtu)	NOx (lb/MMBtu)	CO (lb/hr)	NOx (lb/hr)	% Load	% Load
1264	0.003	0.098	3.792	123.872	0.957575758	0.957575758
1060	0.026	0.09	27.56	95.4	0.803030303	0.803030303
961	0.048	0.092	46.128	88.412	0.728030303	0.728030303
859	0.347	0.132	298.073	113.388	0.650757576	0.650757576

Using the AP-42 emission factor of 1.27 lb/MMBtu is more conservative than using the 2017 CO stack test values for lower loads. The installation must use a conservative value since they do not want to track and they do not want to retest CO.

Preliminary 2014 Stack Test Results

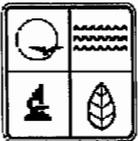
Heat Input (MMBtu/hr)	CO (lb/MMBtu)	NOx (lb/MMBtu)	CO (lb/hr)	NOx (lb/hr)	% Load	% Load
1232.7	Not provided	0.07		85.9	0.933863636	0.933863636
1188.8	Not provided	0.069		82.4	0.900606061	0.900606061
1116.6	Not provided	0.103		115	0.845909091	0.845909091
1061.4	Not provided	0.113		119.9	0.804090909	0.804090909

NSPS GG applies.

NSPS KKKK doesn't apply since the turbine was constructed in 1998 and hasn't since been modified or reconstructed.

MACT YYYY doesn't apply because the installation isn't a major source.

Acid Rain Appendix E may only be used if the annual capacity is less than 20% and the three-year average capacity is less than 10%.



PERFORMANCE TEST PLAN

Submitted to: MO Dept. of Natural Resources,
Air Pollution Control Program, Enforcement Section

at P.O. Box 176, Jefferson City, MO 65102 or *Stack Testing@dnr.mo.gov*

Date Submitted: _____

Attention: _____

Proposed Test Date: _____

Test date must be agreed to by Air Pollution Control Program

1.) FACILITY INFORMATION

Name:		
Address:		
City	State:	Zip:
Name & title of Contact Person:		
Phone # of Contact Person:	Mobile #:	

2.) AIR POLLUTION SOURCE TO BE TESTED

Type of Facility/Source:		
Permit #	FIPS/Plant ID:	PORT #
Address/Location:		
Directions to Source (or map attached):		
Initial Start-up Date:		
Reason for Test:	Condition of Permit	Consent Agreement
	Administrative Order	
	Other (specify)	

3.) TESTING FIRM INFORMATION

Name of Firm:		
Address:		
City	State:	Zip:
Name & title of Contact Person:		
Phone # of Contact Person:	Mobile #:	
Number of employees of firm:		
No. of employees actually engaged in air pollution source testing:		
Organizational chart with names & title of personnel: (please attach)		

3.) TESTING FIRM INFORMATION: (cont.)	
Location & description of laboratory facilities:	
Subcontractor(s) utilized by firm for source testing activities:	
Number of air pollution sources previously tested by firm:	
Sources tested by firm in Missouri in past 3 years (source, test, date):	

4.) PERFORMANCE TEST INFORMATION:					
	Pollutant	No. of Sampling Points	Total Time per Test Run	No. of Test Runs	Test Method to be Used
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					

8.) TEST PROCEDURES & EQUIPMENT**A. Sampling Equipment Information:**

Manufacturer and model of the sampling equipment to be used by the tester for the performance tests, along with a description of any equipment which may differ from that required by the specified method(s).

B. Test Procedures:

Description of any test procedures to be used in the conduct of the performance tests which may differ from the specified method(s).

NOTE: Deviations from EPA test methods observed during test procedures will not necessarily be corrected by agency observer and could result in agency rejection of test results.

C. Analytical Procedures:

Description of any analytical procedures which differ from the specified method(s).

D. Data Sheets:

Sample of all field data sheets which do not provide the data shown on the example sheets in 40 CFR 60 for the specified method(s).

E. Air Pollution Control Equipment:

Types and manufacturers of all control equipment:

Design or guarantee efficiency

Design gas volume at full load (acfm)

Design pressure drop

Maintenance schedule and method of record keeping:

9) SPECIFIC for Gas Turbines	
A description of the source operation including as a minimum the following:	
A.	Manufacturer and model of turbine:
B.	Type of heat recovery system on the gas turbine exhaust (simple cycle, regenerative cycle, or combined cycle):
C.	Heat input rate at peak load, gigajoules/hour at ISO conditions:
D.	Usage of turbine (gas and oil transportation or production, emergency standby, steam or electrical generation):
E.	Thermal efficiency at peak load based on lower heating value of the fuel (heat input per unit of power output):
F.	Type of fuel(s) used and ultimate analysis of the fuel burned (%H, %C, %S, %N, %O, %H ₂ O & GCV) or F factors to be used in test:
G.	Emission control technology:
H.	Normal operating schedule:
I.	Diagram of facility showing flow of exhaust gases (please attach):

SOURCE TESTING REPORT FORMAT**COVER**

- Plant name and location
- Source sampled
- Testing company or agency, name, and address

CERTIFICATION

- Certification by team leader
- Certification by reviewer (e.g.: Professional Engineer)

INTRODUCTION

- Test purpose
- Test location, type of process
- Test dates
- Pollutants tested
- Observers' names (industry and agency)
- Any other important background information

SUMMARY OF RESULTS

- Emission results
- Process data, as related to determination of compliance
- Allowable emissions
- Description of collected samples
- Visible emissions summary
- Discussion of errors, both real and apparent

SOURCE OPERATION

- Description of process and control device
- Process and control equipment flow diagram
- Process data and results, with example calculations
- Representatives of raw materials and products
- Any specially required operation demonstrated

SAMPLING and ANALYSIS PROCEDURES

- Sampling port location and dimensioned cross section
- Sampling port description, including labeling system
- Sampling train description
- Brief description of sampling procedures, with discussion of deviations from standard methods
- Brief description of analytical procedures, with discussion of deviations from standard methods

APPENDIX

- Complete results with example calculations
- Raw field data (original, not computer printouts)
- Laboratory report, with chain of custody
- Test log
- Calibration procedures and results
- Project participants and titles
- Related correspondence