TITLE V PERMIT
RENEWAL APPLICATION
BIG SANDY PEAKER PLANT, LLC
PERMIT NO. R30-09900080-2014

Prepared for:

Big Sandy Peaker Plant, LLC
PO Box 415
Kenova, West Virginia 25530

Prepared by:

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Project No. 0101-18-0238-002

September 2018

POTESTA

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SECTION I

GENERAL FORMS

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF AIR QUALITY

601 57th Street SE

Charleston, WV 25304

Phone: (304) 926-0475

www.dep.wv.gov/daq

INITIAL/RENEWAL TITLE V PERMIT APPLICATION - GENERAL FORMS

Section 1: General Information

1. **Name of Applicant (As registered with the WV Secretary of State's Office):**
Big Sandy Peaker Plant, LLC

2. Facility Name or Location:
Big Sandy Peaker Plant

3. DAQ Plant ID No.:
0 9 9 — 0 0 0 8 0

4. Federal Employer ID No. (FEIN):
2 0 5 9 0 6 5 9 7

5. **Permit Application Type:**

☐ Initial Permit — When did operations commence? 2001

☒ Permit Renewal — What is the expiration date of the existing permit? 03/24/2019

☐ Update to Initial/Renewal Permit Application

6. Type of Business Entity:

☐ Corporation ☐ Governmental Agency ☒ LLC
☐ Partnership ☐ Limited Partnership

7. Is the Applicant the:

☐ Owner ☐ Operator ☒ Both

If the Applicant is not both the owner and operator, please provide the name and address of the other party.

_____

_____

_____

8. Number of onsite employees:
6

9. Governmental Code:

☒ Privately owned and operated; 0
☐ Federally owned and operated; 1
☐ State government owned and operated; 2
☐ County government owned and operated; 3
☐ Municipality government owned and operated; 4
☐ District government owned and operated; 5

10. Business Confidentiality Claims

Does this application include confidential information (per 45CSR31)? ☐ Yes ☒ No

If yes, identify each segment of information on each page that is submitted as confidential, and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's *"PRECAUTIONARY NOTICE-CLAIMS OF CONFIDENTIALITY"* guidance.

11. Mailing Address		
Street or P.O. Box: PO Box 415		
City: Kenova	**State:** WV	**Zip:** 25530
Telephone Number: (304) 453-3777	**Fax Number:** None	

12. Facility Location		
Street: 2570 Route 52	**City:** Kenova	**County:** Wayne
UTM Easting: 360.70189 km	**UTM Northing:** 4,245.21374 km	**Zone:** ☒ 17 or ☐ 18
Directions: Site is located between the Big Sandy River and State Route 52 and borders the Kenova Water Authority Treatment Plant on the south and Braskem Chemical Plant on the north.		
Portable Source? ☐ Yes ☒ No		
Is facility located within a nonattainment area? ☒ Yes ☐ No		**If yes, for what air pollutants?** PM 2.5
Is facility located within 50 miles of another state? ☒ Yes ☐ No		**If yes, name the affected state(s).** Kentucky Ohio
Is facility located within 100 km of a Class I Area[1]? ☐ Yes ☒ No **If no, do emissions impact a Class I Area[1]?** ☐ Yes ☒ No		**If yes, name the area(s).**

[1] *Class I areas include Dolly Sods and Otter Creek Wilderness Areas in West Virginia, and Shenandoah National Park and James River Face Wilderness Area in Virginia.*

13. Contact Information		
Responsible Official: Jennifer Phillips		**Title:** Vice President
Street or P.O. Box: 200 West Madison Street #3810		
City: Chicago	**State:** IL	**Zip:** 60606
Telephone Number: (202) 716-2549	**Fax Number:** None	
E-mail address: jphillips@mrpgenco.com		
Environmental Contact: Robert Rowe		**Title:** Environmental Specialist
Street or P.O. Box: 13 Reads Way, Suite 100		
City: New Castle	**State:** DE	**Zip:** 19720
Telephone Number: (302) 356-9832	**Fax Number:** None	
E-mail address: robert.rowe@naes.com		
Application Preparer: Patrick E. Ward		**Title:** Manager of Air Permitting
Company: Potesta & Associates, Inc.		
Street or P.O. Box: 7012 MacCorkle Avenue, SE		
City: Charleston	**State:** WV	**Zip:** 25304
Telephone Number: (304) 342-1400	**Fax Number:** (304) 343-9031	
E-mail address: peward@potesta.com		

14. Facility Description

List all processes, products, NAICS and SIC codes for normal operation, in order of priority. Also list any process, products, NAICS and SIC codes associated with any alternative operating scenarios if different from those listed for normal operation.

Process	Products	NAICS	SIC
Natural Gas-Fired Turbine Engines	Electric Power	221112	4911

Provide a general description of operations.

The facility is a 330 megawatt natural gas-fired electric generating peaking station. The facility consists of six (6) Pratt & Whitney FT8 Twin Pac units. Each unit consists of (2) natural gas-fired 300 MMBtu/hr turbines. The facility includes a 1,135 Bhp emergency engine to restore site power (previously called "black-start generator").

15. Provide an **Area Map** showing plant location as **ATTACHMENT A**.

16. Provide a **Plot Plan(s)**, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is located as **ATTACHMENT B**. For instructions, refer to "Plot Plan - Guidelines."

17. Provide a detailed **Process Flow Diagram(s)** showing each process or emissions unit as **ATTACHMENT C**. Process Flow Diagrams should show all emission units, control equipment, emission points, and their relationships.

Section 2: Applicable Requirements

18. Applicable Requirements Summary	
Instructions: Mark all applicable requirements.	
☐ SIP	☐ FIP
☒ Minor source NSR (45CSR13)	☐ PSD (45CSR14)
☐ NESHAP (45CSR34)	☐ Nonattainment NSR (45CSR19)
☒ Section 111 NSPS	☐ Section 112(d) MACT standards
☐ Section 112(g) Case-by-case MACT	☐ 112(r) RMP
☐ Section 112(i) Early reduction of HAP	☐ Consumer/commercial prod. reqts., section 183(e)
☐ Section 129 Standards/Reqts.	☒ Stratospheric ozone (Title VI)
☐ Tank vessel reqt., section 183(f)	☐ Emissions cap 45CSR§30-2.6.1
☐ NAAQS, increments or visibility (temp. sources)	☐ 45CSR27 State enforceable only rule
☒ 45CSR4 State enforceable only rule	☒ Acid Rain (Title IV, 45CSR33)
☐ Emissions Trading and Banking (45CSR28)	☒ **C**ompliance **A**ssurance **M**onitoring (40CFR64)
☒ CAIR NO_x Annual Trading Program (45CSR39) **Replaced by CSAPR**	☒ CAIR NO_x Ozone Season Trading Program (45CSR40) **Replaced by CSAPR**
☒ CAIR SO_2 Trading Program (45CSR41) **Replaced by CSAPR**	

19. Non Applicability Determinations

List all requirements which the source has determined not applicable and for which a permit shield is requested. The listing shall also include the rule citation and the reason why the shield applies.

The following requirements have been determined not to be applicable to the subject facility due to the following:

45CSR2	**To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers**. According to R13-2383C the natural gas turbines are subject to 45CSR2. However, the turbines are not indirect heat exchangers and by definition are not fuel burning units. The turbines use the combustion gases to turn the turbine blades. Therefore, 45CSR2 is not listed as an applicable requirement for the turbines in the Title V permit.
40 C.F.R. Part 60 Subpart KKK	**Standards of Performance for Equipment Leaks of VOC From Onshore Natural Gas Processing Plant.** The Big Sandy Peaker Plant is not engaged in the extraction or fractionation of natural gas liquids from field gas, the fractionation of mixed natural gas liquids to natural gas products, or both.
40 C.F.R. Part 60 Subpart KKKK	**Standards of Performance for Stationary Combustion Turbines. Big Sandy Peaker Plant's turbines were installed in 2000.** The Big Sandy Peaker Plant is not subject to 40 C.F.R. Part 60 Subpart KKKK, which is for turbines that commenced construction, modification or reconstruction after February 18, 2005.

☒ Permit Shield

19. Non Applicability Determinations *(Continued)* - *Attach additional pages as necessary.*

List all requirements which the source has determined not applicable and for which a permit shield is requested. The listing shall also include the rule citation and the reason why the shield applies.

40 C.F.R. Part 63 Subpart HH	**National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities.** The Big Sandy Peaker Plant is not subject to Subpart HH since the Big Sandy Peaker Plant is not a natural gas production facility.
40 C.F.R. Part 63 Subpart HHH	**National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities.** The Big Sandy Peaker Plant is not subject to Subpart HHH since the Big Sandy Peaker Plant is not a natural gas transmission and storage facility.
40 C.F.R. Part 63 Subpart YYYY	**National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines.** The Big Sandy Peaker Plant is not subject to Subpart YYYY since it is not a major source of HAPs.

☐ Permit Shield

20. Facility-Wide Applicable Requirements

List all facility-wide applicable requirements. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*).

	Rule/Regulation/R 13 Permit	Existing R30 Permit Condition	Name	Requirement
1	45CSR§6-3.1.	3.1.1.	Open Burning	Open burning of refuse prohibited.
2	45CSR§6-3.2.	3.1.2.	Open Burning Exemptions	Stipulation to open burning exemptions of 45CSR§6-3.1.
3	40CFR§61.145(b) and 45CSR34	3.1.3.	Asbestos	Asbestos inspection prior to demolition or renovation.
4	45CSR§4-3.1 State Enforceable only.	3.1.4.	Odor	Prohibits discharges of pollutants which cause or contribute to objectionable odors.
5	45CSR§11-5.2.	3.1.5.	Standby Plan for Reducing Emissions	When requested by the Secretary, standby plans for emissions reduction will be prepared.
6	WV Code §22-5-4(a)(14)	3.1.6.	Emission inventory	Annual submission of an emission inventory.
7	40CFR82, Subpart F	3.1.7.	Ozone-depleting substances	Requirement to follow: a. 40CFR §§ 82.154 & 82.156; b. 40CFR § 82.158; c. 40CFR §82.161.
8	40CFR68	3.1.8.	Risk Management Plan	Submission of a risk management plan if required.
9	45CSR§§ 39-6.1.b and 20.1 45CSR§§39-23.2 45CSR§§39-24.1	3.1.9.	CAIR NOx Annual Trading Program	CAIR replaced with CSAPR.
10	45CSR§§ 40-6.1.b and 20.1 45CSR§§40-23.2 45CSR§§40-24.1	3.1.10.	CAIR NOx Ozone Season Trading Program	CAIR replaced with CSAPR.
11	45CSR§§ 41-6.1.b and 20.1, 45CSR§§41-23.2 45CSR§§41-24.1	3.1.1	CAIR SO2 Trading Program	CAIR replaced with CSAPR.
12	45CSR13, R13-2383, C.3.	3.1.2	Compliance with Regulation 13 Applications	Requirement to construct and operate in accordance with R13-2383, R13-2383A, R13-2383B, and R13-2383C, and any amendments.
13	WV Code §22-5-4(a) (14-15) and 45CSR13	3.3.1.	Stack Testing	Requirement to conduct tests to determine compliance with permitted emission limits.
14	45CSR §30-5.1.c.2.A	3.4.1.	Monitoring Information	Requirement to keep records of monitoring information.
15	45CSR§30-5.1.c.2.B	3.4.2.	Retention of Records	Requirement to retain records of monitoring and support information at least five (5) years.

20. Facility-Wide Applicable Requirements

List all facility-wide applicable requirements. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*).

	Rule/Regulation/ R13 Permit	Existing R30 Permit Condition	Name	Requirement
16	45CSR§30-5.1.c State Enforceable Only	3.4.3	Odors	Maintain a record of all odor complaints received.
17	45CSR§30-4.4 and 5.1.c.3D.	3.5.1.	Responsible Official	Certification of required documents by a responsible official.
18	45CSR§30.5.1.c.3. E	3.5.2.	Confidential Treatment	Confidential submission of reporting under 45CSR§30.5.1.c.3.
19	NA	3.5.3	NA	Procedure and addresses for submissions.
20	45CSR§30-8.	3.5.4	Certified Emissions Statements	Submission of a certified emission statement and pay fees on an annual basis.
21	45CSR§30.5.3.e.	3.5.5.	Compliance certifications	Certification of compliance with the conditions of the permit.
22	45CSR§30.5.1.c.3. A.	3.5.6.	Semi-annual monitoring reports	Requirement to submit semi-annual reports of required monitoring.
23	NA	3.5.7.	Emergencies	For emergency situations refer to Permit Section 2.17.
24	45CSR§30.5.1.c.3. C. 45CSR§30.5.1.c.3. B.	3.5.8.	Deviations	a. Requirement to submit supplemental reports of deviations of: 1. Emergency or upset conditions; 2. Imminent and substantial danger to public health, safety, or environment; 3. More frequent reporting required by permit; 4. Identify cause of deviation. b. Deviation of conditions defined in permit, probable cause and corrective actions.
25	45CSR§ 30-4.3.h.1.B.	3.5.9.	New applicable requirements	New applicable requirements promulgated during term of permit must be met on a timely basis.

☒ Permit Shield

20. Facility-Wide Applicable Requirements *(Continued)* - *Attach additional pages as necessary.*

For all facility-wide applicable requirements listed above, provide monitoring/testing/recordkeeping/ reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number and/or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

	Rule/Regulation/ R13 Permit	Existing R30 Permit Condition	Name	Method of Compliance
1	45CSR§6-3.1.	3.1.1.	Open Burning	NA. Facility does not conduct open burning.
2	45CSR§6-3.2.	3.1.2.	Open Burning Exemptions	NA
3	40CFR§61.145(b) and 45CSR34	3.1.3.	Asbestos	Inspection will occur as required.
4	45CSR§4-3.1 State Enforceable only.	3.1.4.	Odor	Recordkeeping of complaints.
5	45CSR§11-5.2.	3.1.5.	Standby Plan for Reducing Emissions	When requested.
6	WV Code §22-5-4(a)(14)	3.1.6.	Emission inventory	Reporting.
7	40CFR82, Subpart F	3.1.7.	Ozone-depleting substances	Requirement to follow: a. 40CFR §§ 82.154 & 82.156; b. 40CFR § 82.158; c. 40CFR §82.161.
8	40CFR68	3.1.8.	Risk Management Plan	Submission if required.
9	45CSR§§ 39-6.1.b and 20.1 45CSR§§39-23.2 45CSR§§39-24.1	3.1.9.	CAIR NOx Annual Trading Program	CAIR replaced with CSAPR.
10	45CSR§§ 40-6.1.b and 20.1 45CSR§§40-23.2 45CSR§§40-24.1	3.1.10.	CAIR NOx Ozone Season Trading Program	CAIR replaced with CSAPR.
11	45CSR§§ 41-6.1.b and 20.1, 45CSR§§41-23.2 45CSR§§41-24.1	3.1.11	CAIR SO2 Trading Program	CAIR replaced with CSAPR.
12	45CSR13, R13-2383, C.3.	3.1.12	Compliance with Regulation 13 Applications	Requirement to construct and operate in accordance with R13-2383, R13-2383A, R13-2383B, and R13-2383C, and any amendments.
13	WV Code §22-5-4(a)(14-15) and 45CSR13	3.3.1.	Stack Testing	Recordkeeping; Reporting.
14	45CSR§30-5.1.c.2.A	3.4.1.	Monitoring Information	Recordkeeping.
15	45CSR §30-5.1.c.2.B	3.4.2.	Retention of Records	Recordkeeping.
16	45CSR§30-5.1.c State Enforceable Only	3.4.3	Odors	Recordkeeping of complaints.
17	45CSR§30-4.4 and 5.1.c.3D.	3.5.1.	Responsible Official	Certification of required documents by a responsible official.
18	45CSR§30.5.1.c.3.E	3.5.2.	Confidential Treatment	Confidential submission of reporting under 45CSR§30.5.1.c.3.
19	NA	3.5.3	NA	Procedure and addresses for submissions.

20. Facility-Wide Applicable Requirements *(Continued)* - *Attach additional pages as necessary.*

For all facility-wide applicable requirements listed above, provide monitoring/testing/recordkeeping/ reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number and/or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

	Rule/Regulation/ R13 Permit	Existing R30 Permit Condition	Name	Method of Compliance
20	45CSR§30-8.	3.5.4	Certified Emissions Statements	Reporting.
21	45CSR§30.5.3.e.	3.5.5.	Compliance certifications	Reporting.
22	45CSR§30.5.1.c.3.A.	3.5.6.	Semi-annual monitoring reports	Reporting.
23	NA	3.5.7.	Emergencies	For emergency situations refer to Permit Section 2.17.
24	45CSR§30.5.1.c.3.C. 45CSR§30.5.1.c.3.B.	3.5.8.	Deviations	Reporting.
25	45CSR§§ 30-4.3.h.1.B.	3.5.9.	New applicable requirements	New applicable requirements promulgated during term of permit must be met on a timely basis.

Are you in compliance with all facility-wide applicable requirements? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

21. Active Permits/Consent Orders		
Permit or Consent Order Number	Date of Issuance MM/DD/YYYY	List any Permit Determinations that Affect the Permit *(if any)*
R13-2383C	10/09/2013	
R30-09900080-2014	03/24/2014	
CAIR Application	03/21/2007	Replaced by CSAPR
Acid Rain Permit R33-55284-2020-4	10/21/2015	
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22. Inactive Permits/Obsolete Permit Conditions		
Permit Number	Date of Issuance	Permit Condition Number
R13-2383B	01/08/2007	
R13-2383A	06/12/2001	
R13-2383	07/10/2000	
NOx Budget Permit Application	02/13/2002	
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Section 3: Facility-Wide Emissions

23. Facility-Wide Emissions Summary [Tons per Year]	
Criteria Pollutants	Potential Emissions
Carbon Monoxide (CO)	157.18
Nitrogen Oxides (NO_X)	247.60
Lead (Pb)	NAP
Particulate Matter ($PM_{2.5}$)[1]	26.23
Particulate Matter (PM_{10})[1]	26.23
Total Particulate Matter (TSP)	26.23
Sulfur Dioxide (SO_2)	5.36
Volatile Organic Compounds (VOC)	18.59
Hazardous Air Pollutants[2]	Potential Emissions
Benzene	0.0007
Toluene	0.0003
Xylenes	0.0002
Formaldehyde	0.3001
Acetaldehyde	0.0001
Acrolein	0.0001
Naphthalene	0.0001
Regulated Pollutants other than Criteria and HAP	Potential Emissions

[1]$PM_{2.5}$ and PM_{10} are components of TSP.
[2]For HAPs that are also considered PM or VOCs, emissions should be included in both the HAPs section and the Criteria Pollutants section.

Section 4: Insignificant Activities

24. Insignificant Activities (Check all that apply)		
☒	1.	Air compressors and pneumatically operated equipment, including hand tools.
☒	2.	Air contaminant detectors or recorders, combustion controllers or shutoffs.
☒	3.	Any consumer product used in the same manner as in normal consumer use, provided the use results in a duration and frequency of exposure which are not greater than those experienced by consumer, and which may include, but not be limited to, personal use items; janitorial cleaning supplies, office supplies and supplies to maintain copying equipment.
☒	4.	Bathroom/toilet vent emissions.
☒	5.	Batteries and battery charging stations, except at battery manufacturing plants.
☐	6.	Bench-scale laboratory equipment used for physical or chemical analysis, but not lab fume hoods or vents. Many lab fume hoods or vents might qualify for treatment as insignificant (depending on the applicable SIP) or be grouped together for purposes of description.
☐	7.	Blacksmith forges.
☐	8.	Boiler water treatment operations, not including cooling towers.
☐	9.	Brazing, soldering or welding equipment used as an auxiliary to the principal equipment at the source.
☐	10.	CO_2 lasers, used only on metals and other materials which do not emit HAP in the process.
☐	11.	Combustion emissions from propulsion of mobile sources, except for vessel emissions from Outer Continental Shelf sources.
☒	12.	Combustion units designed and used exclusively for comfort heating that use liquid petroleum gas or natural gas as fuel.
☒	13.	Comfort air conditioning or ventilation systems not used to remove air contaminants generated by or released from specific units of equipment.
☒	14.	Demineralized water tanks and demineralizer vents.
☐	15.	Drop hammers or hydraulic presses for forging or metalworking.
☐	16.	Electric or steam-heated drying ovens and autoclaves, but not the emissions from the articles or substances being processed in the ovens or autoclaves or the boilers delivering the steam.
☐	17.	Emergency (backup) electrical generators at residential locations.
☐	18.	Emergency road flares.
☐	19.	Emission units which do not have any applicable requirements and which emit criteria pollutants (CO, NO_x, SO_2, VOC and PM) into the atmosphere at a rate of less than 1 pound per hour and less than 10,000 pounds per year aggregate total for each criteria pollutant from all emission units. Please specify all emission units for which this exemption applies along with the quantity of criteria pollutants emitted on an hourly and annual basis: _____ _____ _____ _____ _____ _____ _____ _____ _____

24. Insignificant Activities (Check all that apply)		
☐	20.	Emission units which do not have any applicable requirements and which emit hazardous air pollutants into the atmosphere at a rate of less than 0.1 pounds per hour and less than 1,000 pounds per year aggregate total for all HAPs from all emission sources. This limitation cannot be used for any source which emits dioxin/furans nor for toxic air pollutants as per 45CSR27. Please specify all emission units for which this exemption applies along with the quantity of hazardous air pollutants emitted on an hourly and annual basis: _____ _____ _____
☐	21.	Environmental chambers not using hazardous air pollutant (HAP) gases.
☒	22.	Equipment on the premises of industrial and manufacturing operations used solely for the purpose of preparing food for human consumption.
☐	23.	Equipment used exclusively to slaughter animals, but not including other equipment at slaughterhouses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment.
☐	24.	Equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis.
☐	25.	Equipment used for surface coating, painting, dipping or spray operations, except those that will emit VOC or HAP.
☒	26.	Fire suppression systems.
☒	27.	Firefighting equipment and the equipment used to train firefighters.
☐	28.	Flares used solely to indicate danger to the public.
☒	29.	Fugitive emission related to movement of passenger vehicle provided the emissions are not counted for applicability purposes and any required fugitive dust control plan or its equivalent is submitted.
☐	30.	Hand-held applicator equipment for hot melt adhesives with no VOC in the adhesive formulation.
☒	31.	Hand-held equipment for buffing, polishing, cutting, drilling, sawing, grinding, turning or machining wood, metal or plastic.
☐	32.	Humidity chambers.
☐	33.	Hydraulic and hydrostatic testing equipment.
☐	34.	Indoor or outdoor kerosene heaters.
☒	35.	Internal combustion engines used for landscaping purposes.
☐	36.	Laser trimmers using dust collection to prevent fugitive emissions.
☐	37.	Laundry activities, except for dry-cleaning and steam boilers.
☐	38.	Natural gas pressure regulator vents, excluding venting at oil and gas production facilities.
☐	39.	Oxygen scavenging (de-aeration) of water.
☐	40.	Ozone generators.
☒	41.	Plant maintenance and upkeep activities (e.g., grounds-keeping, general repairs, cleaning, painting, welding, plumbing, re-tarring roofs, installing insulation, and paving parking lots) provided these activities are not conducted as part of a manufacturing process, are not related to the source's primary business activity, and not otherwise triggering a permit modification. (Cleaning and painting activities qualify if they are not subject to VOC or HAP control requirements. Asphalt batch plant owners/operators must still get a permit if otherwise requested.)

24. Insignificant Activities (Check all that apply)		
☐	42.	Portable electrical generators that can be moved by hand from one location to another. "Moved by Hand" means that it can be moved without the assistance of any motorized or non-motorized vehicle, conveyance, or device.
☒	43.	Process water filtration systems and demineralizers.
☐	44.	Repair or maintenance shop activities not related to the source's primary business activity, not including emissions from surface coating or de-greasing (solvent metal cleaning) activities, and not otherwise triggering a permit modification.
☒	45.	Repairs or maintenance where no structural repairs are made and where no new air pollutant emitting facilities are installed or modified.
☐	46.	Routing calibration and maintenance of laboratory equipment or other analytical instruments.
☐	47.	Salt baths using nonvolatile salts that do not result in emissions of any regulated air pollutants. Shock chambers.
☐	48.	Shock chambers.
☐	49.	Solar simulators.
☐	50.	Space heaters operating by direct heat transfer.
☐	51.	Steam cleaning operations.
☐	52.	Steam leaks.
☐	53.	Steam sterilizers.
☐	54.	Steam vents and safety relief valves.
☐	55.	Storage tanks, reservoirs, and pumping and handling equipment of any size containing soaps, vegetable oil, grease, animal fat, and nonvolatile aqueous salt solutions, provided appropriate lids and covers are utilized.
☒	56.	Storage tanks, vessels, and containers holding or storing liquid substances that will not emit any VOC or HAP. Exemptions for storage tanks containing petroleum liquids or other volatile organic liquids should be based on size limits such as storage tank capacity and vapor pressure of liquids stored and are not appropriate for this list.
☐	57.	Such other sources or activities as the Director may determine.
☒	58.	Tobacco smoking rooms and areas.
☐	59.	Vents from continuous emissions monitors and other analyzers.

Section 5: Emission Units, Control Devices, and Emission Points

25. Equipment Table

Fill out the **Title V Equipment Table** and provide it as **ATTACHMENT D**.

See Attached

26. Emission Units

For each emission unit listed in the **Title V Equipment Table**, fill out and provide an **Emission Unit Form** as **ATTACHMENT E**.

See attached

For each emission unit not in compliance with an applicable requirement, fill out a **Schedule of Compliance Form** as **ATTACHMENT F**.

Not Applicable

27. Control Devices

For each control device listed in the **Title V Equipment Table**, fill out and provide an **Air Pollution Control Device Form** as **ATTACHMENT G**.

See Attached

For any control device that is required on an emission unit in order to meet a standard or limitation for which the potential pre-control device emissions of an applicable regulated air pollutant is greater than or equal to the Title V Major Source Threshold Level, refer to the **Compliance Assurance Monitoring (CAM) Form(s)** for CAM applicability. Fill out and provide these forms, if applicable, for each Pollutant Specific Emission Unit (PSEU) as **ATTACHMENT H**.

See Attached

Section 6: Certification of Information

28. Certification of Truth, Accuracy and Completeness and Certification of Compliance

Note: ***This Certification must be signed by a responsible official. The original, signed in blue ink, must be submitted with the application. Applications without an original signed certification will be considered as incomplete.***

a. Certification of Truth, Accuracy and Completeness

I certify that I am a responsible official (as defined at 45CSR§30-2.38) and am accordingly authorized to make this submission on behalf of the owners or operators of the source described in this document and its attachments. I certify under penalty of law that I have personally examined and am familiar with the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine and/or imprisonment.

b. Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

Responsible official (type or print)

Name: Jennifer Phillips	Title: Vice President

Responsible official's signature:

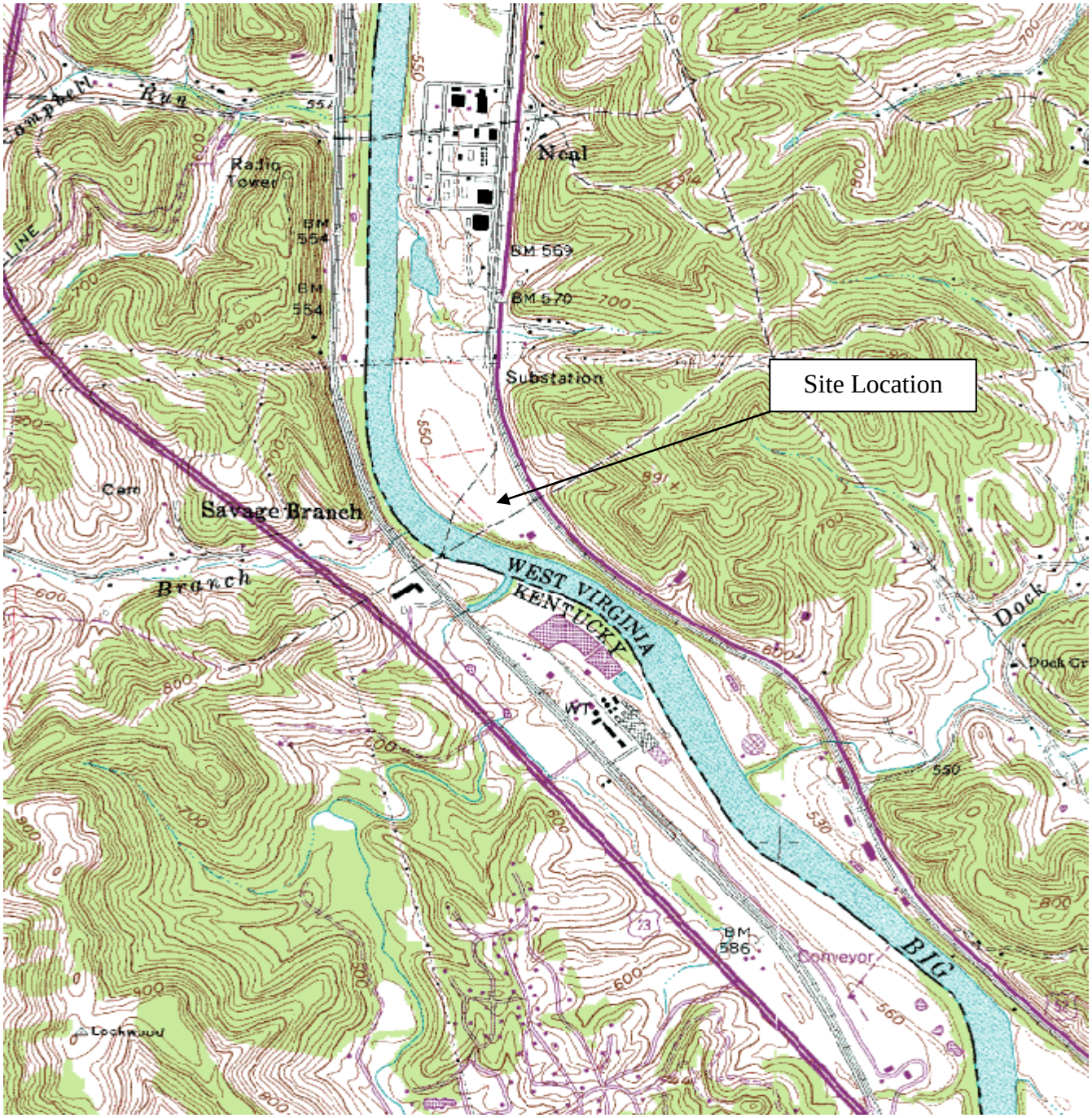
Signature: Jennifer Phillips (Must be signed and dated in blue ink) Signature Date: 9/12/18

Note: Please check all applicable attachments included with this permit application:	
☒	ATTACHMENT A: Area Map
☒	ATTACHMENT B: Plot Plan(s)
☒	ATTACHMENT C: Process Flow Diagram(s)
☒	ATTACHMENT D: Equipment Table
☒	ATTACHMENT E: Emission Unit Form(s)
☐	ATTACHMENT F: Schedule of Compliance Form(s)
☒	ATTACHMENT G: Air Pollution Control Device Form(s)
☒	ATTACHMENT H: Compliance Assurance Monitoring (CAM) Form(s)

All of the required forms and additional information can be found and downloaded from, the DEP website at www.dep.wv.gov/daq, requested by phone (304) 926-0475, and/or obtained through the mail.

ATTACHMENT A

AREA MAP



Copied from the Whites Creek, USGS Burnaugh (KY,WV) Topo Map

Potesta & Associates, Inc.
7012 MacCorkle Avenue, SE, Charleston, WV 25304
Phone: (304) 342-1400 Fax: (304) 343-9031
E-Mail: potesta@potesta.com

Big Sandy Peaker Plant, L.L.C.
Big Sandy Peaker Plant
Kenova, West Virginia
Project No. 0101-18-0238-002

ATTACHMENT B

PLOT PLAN

No.	Date	Revision

PLANT NORTH

TRUE NORTH

UTM COORDINATES
ZONE 17S
EASTING: 360.70189 KM
NORTHING: 4,245.21374 KM

BIG SANDY RIVER

EMERGENCY GENERATOR G1
(EMISSION POINT E1)

GS-06 (EMISSION POINT
GS-06-1 AND GS-06-2)

GS-05 (EMISSION POINT
GS-05-1 AND GS-05-2)

GS-04 (EMISSION POINT
GS-04-1 AND GS-04-2)

GS-03 (EMISSION POINT
GS-03-1 AND GS-03-2)

GS-02 (EMISSION POINT
GS-02-1 AND GS-02-2)

GS-01 (EMISSION POINT
GS-01-1 AND GS-01-2)

WV ROUTE 52

LEGEND

- SURFACE WATER FLOW DIRECTION
- CONVEYANCE PIPES
- G — GAS LINE
- x — FENCE
- PAVEMENT
- (F) FIRE EXTINGUISHER
- FA FIRE ALARM
- SK SPILL KIT

GRAPHIC SCALE
60 30 0 60 120

MAPPING REFERENCE:

ISSUE DATE 8/13/2018

-01
CAD File No.
MBS
Drawn
PEW
Checked
PEW
Approved
NOTED
Scale:
AUGUST 2018
Date:
18-0238-002
Project No.

POTESTA & ASSOCIATES, INC.
ENGINEERS AND ENVIRONMENTAL CONSULTANTS
7012 MacCorkle Ave. SE. Charleston, WV 25304
TEL: (304) 342-1400 FAX: (304) 343-9031
E-Mail Address: potesta@potesta.com

POTESTA

Client
BIG SANDY PEAKER PLANT
200 WEST MADISON ST. #3810
CHICAGO, ILLINOIS 60606

Title
PLOT PLAN

1
Drawing No.

ATTACHMENT C

PROCESS FLOW DIAGRAM

FROM RAW WATER SYSTEM

WATER SUPPLY

TO WASTE WATER DISPOSAL

BLOWDOWN

INLET AIR

INLET FILTER WITH EVAPORATIVE COOLER

EXHAUST TO AIR

EXHAUST TO AIR

CO CATALYST

CO CATALYST

INLET FILTER WITH EVAPORATIVE COOLER

INLET AIR

UNIT A
(See Note)

UNIT B
(See Note)

COMPRESSOR

TURBINE

GENERATOR

TURBINE

COMPRESSOR

COMBUSTOR

COMBUSTOR

NATURAL GAS

FROM EXISTING OC&E TREATMENT SYSTEM

DEMIN WATER

DEMINERALIZED WATER STORAGE TANK

DEMIN WATER PUMP(S)

NOTE: THE GENERATOR SETUP SHOWN ON THIS DRAWING FOR UNIT A AND UNIT B IS THE SETUP FOR EACH GENERATION UNIT GS-01 (EMISSION POINTS GS-01-1 AND GS-01-S) THROUGH GS-06 (EMISSION POINTS GS-06-2)

POTESTA
Engineers and Environmental Consultants

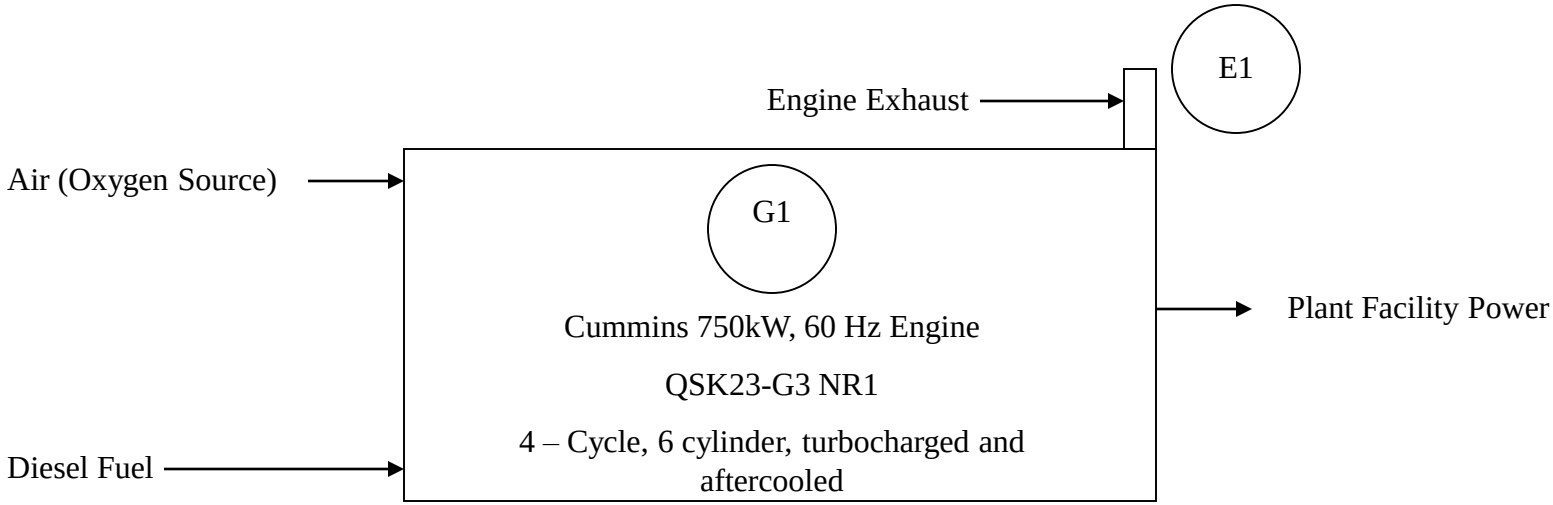
7012 MacCorkle Avenue, S.E
Charleston, West Virginia 25304
Phone: (304) 342-1400
Fax: (304) 343-9031

Big Sandy Peaker Plant, L.L.C.
POWER GENERATION
PROCESS FLOW DIAGRAM
Kenova, West Virginia
Project No. 0101-18-0238-002

Big Sandy Peaker Plant

Emergency Generator*

Process Flow Diagram – Attachment C



*Previously called the Black-Start Generator

ATTACHMENT D

TITLE V EQUIPMENT TABLE

ATTACHMENT D - Title V Equipment Table

(includes all emission units at the facility except those designated as insignificant activities in Section 4, Item 24 of the General Forms)

Emission Point ID[1]	Control Device[1]	Emission Unit ID[1]	Emission Unit Description	Design Capacity	Year Installed/ Modified
GS-01-1 GS-01-2	Water Injection and Oxidation Catalyst	GS-01	Pratt and Whitney Twin Pac Natural Gas Turbine	599.02 MMBtu/hr	2000
GS-02-1 GS-02-2	Water Injection and Oxidation Catalyst	GS-02	Pratt and Whitney Twin Pac Natural Gas Turbine	599.02 MMBtu/hr	2000
GS-03-1 GS-03-2	Water Injection and Oxidation Catalyst	GS-03	Pratt and Whitney Twin Pac Natural Gas Turbine	599.02 MMBtu/hr	2000
GS-04-1 GS-04-2	Water Injection and Oxidation Catalyst	GS-04	Pratt and Whitney Twin Pac Natural Gas Turbine	599.02 MMBtu/hr	2000
GS-05-1 GS-05-2	Water Injection and Oxidation Catalyst	GS-05	Pratt and Whitney Twin Pac Natural Gas Turbine	599.02 MMBtu/hr	2000
GS-06-1 GS-06-2	Water Injection and Oxidation Catalyst	GS-06	Pratt and Whitney Twin Pac Natural Gas Turbine	599.02 MMBtu/hr	2000
E1	None	G1	Cummins Model QSK23-G3 NR1 Emergency Generator (No. 2 Fuel Oil) (formerly "Black-Start")	750kW	2007

[1]For 45CSR13 permitted sources, the numbering system used for the emission points, control devices, and emission units should be consistent with the numbering system used in the 45CSR13 permit. For grandfathered sources, the numbering system should be consistent with registrations or emissions inventory previously submitted to DAQ. For emission points, control devices, and emissions units which have not been previously labeled, use the following 45CSR13 numbering system: 1S, 2S, 3S,... or other appropriate description for emission units; 1C, 2C, 3C,... or other appropriate designation for control devices; 1E, 2E, 3E, ... or other appropriate designation for emission points.

ATTACHMENT E

EMISSION UNIT FORM(S)

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
GS-01; GS-02; GS-03; GS-04; GS-05, GS-06	FT8 Twin Pac Natural Gas Turbine	Water Injection & Oxidation Catalyst

Provide a description of the emission unit (type, method of operation, design parameters, etc.):

Natural Gas Fired Turbine(s) for the purpose of generating electricity.

Manufacturer:	**Model number:**	**Serial number:**
Pratt & Whitney	FT8	NA
Construction date:	**Installation date:**	**Modification date(s):**
NA	2000	NA

Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 599.02 MMBtu/hr/Twin Pac

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
587,271 scf fuel use/Twin Pac	4,614,124,883 scf/6 Twin Pacs	8,760 hours

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? X Yes ___ No	**If yes, is it?** ___ Indirect Fired X Direct Fired
Maximum design heat input and/or maximum horsepower rating: 599.02 MMBtu/hr/Twin Pac	**Type and Btu/hr rating of burners:** Engine

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	0.53 grains/100 scf	NA	1,020 Btu/scf

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH/Turbine	TPY/6 Twin Pacs
Carbon Monoxide (CO)	19.95	156.74
Nitrogen Oxides (NO_X)	31.10	245.00
Lead (Pb)	NA	NA
Particulate Matter ($PM_{2.5}$)	3.00	26.17
Particulate Matter (PM_{10})	3.00	26.17
Total Particulate Matter (TSP)	3.00	26.17
Sulfur Dioxide (SO_2)	0.68	5.31
Volatile Organic Compounds (VOC)	3.30	18.46
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Formaldehyde	0.04	0.30
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

1. Emission limits from R30-09900080-2014, Conditions 4.1.2 & 4.1.3 and 45CSR13, Permit No. R13-2383C (Condition A.2. & A.3.) (GS-01, GS-02, GS-03, GS-04, GS-05, GS-06).

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

<table>
<tr><th></th><th>Existing Permit Condition</th><th>Underlying Requirement</th><th>Applicable Requirement</th></tr>
<tr><td>1</td><td>4.1.1.</td><td>45CSR13, R13-2383, A.1., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06</td><td>The following table provides a list of turbines authorized to operate at the subject facility by this permit. In accordance with the information filed in Permit Application R13-2383, and any amendments or revisions thereto, the sources shall not exceed the specified Maximum Design Heat Input (MDHI), shall utilize the specified control device, and shall combust only the specified fuel:
<table>
<tr><th>Source ID</th><th>Source Description</th><th>MDHI (1) (MMBtu/hr)</th><th>Fuel Combusted</th><th>Control Technology</th></tr>
<tr><td>GS-01</td><td>Pratt & Whitney FT8 Twin Pac</td><td>599.02</td><td>Natural Gas</td><td>Water Injection & Oxidation Catalyst</td></tr>
<tr><td>GS-02</td><td>Pratt & Whitney FT8 Twin Pac</td><td>599.02</td><td>Natural Gas</td><td>Water Injection & Oxidation Catalyst</td></tr>
<tr><td>GS-03</td><td>Pratt & Whitney FT8 Twin Pac</td><td>599.02</td><td>Natural Gas</td><td>Water Injection & Oxidation Catalyst</td></tr>
<tr><td>GS-04</td><td>Pratt & Whitney FT8 Twin Pac</td><td>599.02</td><td>Natural Gas</td><td>Water Injection & Oxidation Catalyst</td></tr>
<tr><td>GS-05</td><td>Pratt & Whitney FT8 Twin Pac</td><td>599.02</td><td>Natural Gas</td><td>Water Injection & Oxidation Catalyst</td></tr>
<tr><td>GS-06</td><td>Pratt & Whitney FT8 Twin Pac</td><td>599.02</td><td>Natural Gas</td><td>Water Injection & Oxidation Catalyst</td></tr>
</table>
(1) As measured @ 32 degrees Fahrenheit, 40% relative humidity, 100% load, and based on a natural gas heating value of 1,020 Btu/scf.</td></tr>
<tr><td>2</td><td>4.1.2.</td><td>45CSR13, R13-2383, A.2., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06</td><td>The hourly emission rates from each natural-gas fired turbine shall not exceed:
<table>
<tr><th>Pollutant</th><th>Hourly Emission Limit (pounds/hour)</th></tr>
<tr><td>Carbon Monoxide (CO)</td><td>19.95</td></tr>
<tr><td>Oxides of Nitrogen (NOx)</td><td>31.10</td></tr>
<tr><td>Particulate Matter < 10 microns (PM_{10})</td><td>3.00</td></tr>
<tr><td>Total Suspended Particulate (TSP)</td><td>3.00</td></tr>
<tr><td>Sulfur Dioxide (SO2)</td><td>0.68</td></tr>
<tr><td>Volatile Organic Compounds (VOCs)</td><td>3.30</td></tr>
<tr><td>Formaldehyde</td><td>0.04</td></tr>
<tr><td></td><td></td></tr>
</table></td></tr>
</table>

<table>
<tr><td>3</td><td>4.1.3.</td><td>45CSR13, R13-2383, A.3., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06</td><td>The combined annual emission rates from the Pratt & Whitney FT8 Twin Pac units shall not exceed:
<table>
<tr><th>Pollutant</th><th>Annual Emission Limit (tons/year)</th></tr>
<tr><td>Carbon Monoxide (CO)</td><td>156.74</td></tr>
<tr><td>Oxides of Nitrogen (NOx)</td><td>245.00</td></tr>
<tr><td>Particulate Matter < 10 microns (PM_{10})</td><td>26.17</td></tr>
<tr><td>Total Suspended Particulate (TSP)</td><td>26.17</td></tr>
<tr><td>Sulfur Dioxide (SO2)</td><td>5.31</td></tr>
<tr><td>Volatile Organic Compounds (VOCs)</td><td>18.46</td></tr>
<tr><td>Formaldehyde</td><td>0.30</td></tr>
</table></td></tr>
<tr><td>4</td><td>4.1.4.</td><td>45CSR13, R13-2383, A.4.,GS-01, GS-02, GS-03, GS-04, GS-05, GS-06]</td><td>The combined annual consumption of natural gas in the Pratt & Whitney FT8 Twin Pac units shall not exceed 4,614,124,883 standard cubic feet. Compliance with the annual natural gas consumption limit shall be determined using a rolling yearly total. A rolling yearly total shall mean the sum of the natural gas consumed at any given time for the previous twelve (12) consecutive months.</td></tr>
<tr><td>5</td><td>4.1.5.</td><td>45CSR13, R13-2383, A.5., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06</td><td>A water-injection system shall be maintained and operated for the control of NOx emissions from each natural-gas fired turbine. The water-injection system shall be monitored pursuant to 40 C.F.R. § 60.334(a), Section 4.2.2.</td></tr>
<tr><td>6</td><td>4.1.6.</td><td>45CSR13, R13-2383, A.6., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06</td><td>An in-stack integrated oxidation catalyst shall be maintained and operated for the control of CO emissions from each natural-gas fired turbine. At such times that are necessary to maintain the performance of the oxidation catalyst, the catalyst shall be replaced.</td></tr>
<tr><td>7</td><td>4.1.7.</td><td>45CSR13, R13-2383, A.7., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06</td><td>The sulfur content of the natural gas as fired in each natural-gas fired turbine shall not exceed 0.53 grains per 100 scf of gas. Compliance with this requirement shall be in accordance with Section 4.4.5.</td></tr>
<tr><td>8</td><td>4.1.8.</td><td>45CSR13, R13-2383, A.8., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06</td><td>The turbines are subject to all applicable limitations and standards under 40 C.F.R. Part 60 Subpart GG (any final revisions made to 40 C.F.R. Part 60 Subpart GG will, where applicable, supersede those specifically cited in this section), including the requirements given below in Sections 4.1.9 through 4.1.12, 4.2.1 and 4.2.2.</td></tr>
<tr><td>9</td><td>4.1.9.</td><td>45CSR16, 40 C.F.R. § 60.332 (a), 45CSR13, R13-2383, A.8.a., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06</td><td>On and after the date on which the performance test required by 40 C.F.R.§ 60.8 is completed, every owner or operator subject to the provisions of 40 C.F.R. 60 Subpart GG as specified in 40 C.F.R. §§ 60.332 (b), (c) and (d) shall comply with one of the provisions in 40 C.F.R. §60.332, except as provided in 40 C.F.R. §§ 60.332 (e), (f), (g), (h), (i), (j), (k), and (l).</td></tr>
</table>

<table>
<tr><td>10</td><td>4.1.10.</td><td>45CSR16, 40 C.F.R. § 60.332 (a) (1), (3), and (4), 45CSR13, R13-2383, A.8.a.1. through 3., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06</td><td>No owner or operator subject to the provisions 40 C.F.R. 60 Subpart GG shall cause to be discharged into the atmosphere from any stationary gas turbine, any gases which contain nitrogen oxides in excess of:

STD = 0.0075* (14.4/Y) + F

Where:

STD =allowable NOx emissions (percent volume at 15 percent oxygen and on a dry basis)

Y=manufacturer’s rated heat rate at manufacturers rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not to exceed 14.4 kilojoules per watt hour.

F =NOx emission allowance for fuel-bound nitrogen as defined in 40 C.F.R. § 60.332 (a) (3).

The use of F in 40 C.F.R. §§ 60.332 (a) (1) and (2) is optional. That is, the owner or operator may choose to apply a NOx allowance for fuel-bound nitrogen and determine the appropriate F-value in accordance with 40 C.F.R. § 60.332 (a) (4) [Section 4.1.10.3.] or may accept an F-value of zero.

If the owner or operator elects to apply a NOx emission allowance for fuel-bound nitrogen, F shall be defined according to the nitrogen content of the fuel during the most recent performance test required under C.F.R. § 60.8 as follows:

<table><tr><th>Fuel-bound nitrogen (percent by weight)</th><th>F (NO_x percent by volume)</th></tr><tr><td>N .015</td><td>0</td></tr><tr><td>0.015<N≤0.1</td><td>0.004 (N)</td></tr><tr><td>0.01<N≤0.25</td><td>0.004+0.0067(N-0.1)</td></tr><tr><td>N>0.25</td><td>0.005</td></tr></table>
Where:

N = the nitrogen content of the fuel (percent by weight).

or:

Manufacturers may develop and submit to EPA custom fuel-bound nitrogen allowances for each gas turbine model they manufacture. These fuel-bound nitrogen allowances shall be substantiated with data and must be approved for use by the Administrator before the initial performance test required by 40 C.F.R. § 60.8. Notices of approval of custom fuel-bound nitrogen allowances will be published in the Federal Register.</td></tr>
<tr><td>11</td><td>4.1.11.</td><td>45CSR16, 40 C.F.R. § 60.332 (b), 45CSR13, R13-2383, A.8.b. GS-01, GS-02, GS-03, GS-04, GS-05, GS-06</td><td>Electric utility stationary gas turbines with a heat input at peak load greater than 107.2 gigajoules per hour (100 million Btu/hour) based on the lower heating value of the fuel fired shall comply with Section 4.1.10.</td></tr>
<tr><td>12</td><td>4.1.12.</td><td>45CSR16, 40 C.F.R. § 60.333, 45CSR13, R13-2383, A.8.c., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06</td><td>On and after the date on which the performance test required to be conducted by 40 C.F.R. § 60.8 is completed, every owner or operator subject of the provision of 40 C.F.R. 60 Subpart GG shall comply with one or the other of the following conditions:

a. No owner or operator subject to the provisions of 40 C.F.R. 60 Subpart GG shall cause to be discharged into the atmosphere from any stationary gas turbine any gases which contains sulfur dioxide in excess of 0.015 percent oxygen by volume at 15% O2 and on a dry basis.
b. No owner or operator subject to the provisions of 40 C.F.R. 60 Subpart GG shall burn in any stationary gas turbine any fuel which contains sulfur in excess of 0.8 percent by weight (8000 ppmw).</td></tr>
</table>

13	4.1.13.	45CSR33, 40 C.F.R. Parts 72, 73, 74, 75, 76, 77, and 78. GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	The gas turbines are Phase II Acid Rain affected units under 45CSR33, as defined by 40 C.F.R § 72.6, and as such are required to meet the requirements of 40 C.F.R. Parts 72, 73, 74, 75, 76, 77 and 78. These requirements include, but are not limited to: a. Hold an Acid Rain permit; b. Hold allowances, as of the allowance transfer deadline, in the unit's compliance sub-account of not less than the total annual emissions of sulfur dioxide for the previous calendar year from the unit; c. Comply with the applicable Acid Rain emissions for sulfur dioxide; d. Comply with the applicable Acid Rain emissions for nitrogen oxides; e. Comply with the monitoring requirements of 40 C.F.R. Part 75 and section 407 of the Clean Air Act of 1990 and regulations implementing section 407 of the Act; f. Submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 C.F.R. Part 72, Subpart I and 40 C.F.R. Part 75.
14	4.2.1.	45CSR16, 40 C.F.R. §60.334 (a), 45CSR13, R13-2383, A.8.d., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	The owner or operator of any stationary gas turbine subject to the provisions of 40 C.F.R. Part 60 Subpart GG and using water injection to control NOx emissions shall install, calibrate, maintain, and operate a continuous monitoring system to monitor and record the fuel consumption and the ratio of water to fuel being fired in the turbine.
15	4.2.2.	45CSR16, 40 C.F.R. §§ 60.334 (h) (1) and (3), 45CSR13, R13-2383, A.8.e., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	The owner or operator of any stationary gas turbine subject to the provisions of 40 C.F.R. Part 60 Subpart GG: 1. Shall monitor the total sulfur content of the fuel being fired in the turbine, except as provided in 40 C.F.R. § 60.334 (h) (3). The sulfur content of the fuel must be determined using total sulfur methods described in 40 C.F.R. § 60.335 (b) (10). Alternatively, if the total sulfur content of the gaseous fuel during the most recent performance test was less than 0.4 weight percent (4000 ppmw), ASTM D4084-82, 94, D5504-01, D6228-98, or Gas Processors Association Standard 2377-86 (all of which are incorporated by reference-see 40 C.F.R. § 60.17), which measure the major sulfur compounds may be used; and 2. Notwithstanding the provisions of 40 C.F.R. § 60.334 (h) (1), the owner or operator may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine, if the gaseous fuel is demonstrated to meet the definition of natural gas in 40 C.F.R. § 60.331 (u), regardless of whether an existing custom schedule approved by the administrator for 40 C.F.R. Part 60 Subpart GG requires such monitoring. The owner or operator shall use one of the following sources of information to make the required demonstration: i. The gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less; or ii. Representative fuel sampling data which show that the sulfur content of the gaseous fuel does not exceed 20 grains/100 scf. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of appendix D to part 75 of this chapter is required.
16	4.2.3.	45CSR §30-5.1.c. and 40 C.F.R. §§ 64.3 (a), 64.3 (b) and 64.6 (c) (2)	The permittee shall calibrate, maintain, and operate a continuous temperature monitoring system with recorder consisting of nine (9) thermocouples to determine "calculated daily average Combustion Turbine Exhaust Gas Temperature (EGT)" at each Combustion Turbine Exhaust before the gases enter the power turbine inlet. The thermocouples used in the monitoring system are to be accurate within plus or minus two (±2) degrees Fahrenheit per the thermocouple manufacturer's information.
17	4.2.4.	45CSR §30-12.7. and 40 C.F.R. §§ 64.3 (a), 64.3 (b) and 64.6 (c) (2)	Compliance with the CO hourly emission limits set forth in Requirement 4.1.2 will be demonstrated if the "calculated daily average Combustion Turbine Exhaust Gas Temperature" generated by the continuous monitoring system in Section 4.2.4 is maintained between 800 to 1369 degree F during normal operations (not including periods of system startup, shutdown or malfunction). An excursion shall be defined as: if during normal operation, the daily average of the "calculated daily average Combustion Turbine Exhaust Gas Temperature" drops below 800 ºF or exceeds 1369 ºF. The Combustion Turbine Exhaust Gas Temperature shall be recorded once each clock hour at half-past the hour during the normal operating periods. Daily average temperature will be defined as the average of all valid hourly temperature recordation in a calendar day. Temperatures which fall outside the typical operating range for the system will be investigated to determine if the reading is accurate or if there is a thermocouple or other monitoring system malfunction.

18	4.2.5.	45CSR §30-5.1.c; 40 C.F.R. § 64.7 (b)	At all times, the owner or operator shall maintain the monitoring specified in Section 4.2.3, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.
19	4.2.6	45CSR §30-5.1.c., 40 C.F.R. § 64.7 (c)	Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.
20	4.2.7	45CSR §30-5.1.c; 40 C.F.R. § 64.7 (d)	a. Upon detecting an excursion or exceedance, the owner or operation shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable. b. Determination of whether the owner or operator has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.
21	4.2.8	45CSR §30-5.1.c; 40 C.F.R. § 64.7 (e)	After approval of monitoring under 40 C.F.R. 64, if the owner or operator identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the owner or operator shall promptly notify the permitting authority and, if necessary, submit a proposed modification to the part 70 or 71 permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.
22	4.2.9	45CSR §30-5.1.c.; 40 C.F.R. § 64.8	Based on the results of a determination made under Section 4.2.7.b, the Administrator or the permitting authority may require the owner or operator to develop and implement a QIP. If a QIP is required, then it shall be developed, implemented, and modified as required according to 40 C.F.R. §§ 64.8 (b) through (e). Refer to Section 4.5.1.c for the reporting required when a QIP is implemented.
23	4.2.10.	45CSR§30-5.1.c., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	At a minimum of once a permit term, to determine compliance with Section 4.1.6, the permittee shall analyze the catalyst activity for one of the natural-gas fired turbines. The analysis should be completed following the manufacturer's recommended procedures. If problems are found during the catalyst activity test, the permittee must perform testing on the remaining eleven (11) catalyst beds and replace the catalyst beds that need to be replaced or take other corrective action consistent with the manufacturer's recommendations. The permittee shall test for catalyst activity on a different turbine each permit term. The analysis shall be completed within 18 months prior to this permits' expiration date.

24	4.3.1.	45CSR13, R13-2383, B.7., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06, G1	Tests that are required by the Director to determine compliance with the emission limitations set forth in Sections 4.1.2, 4.1.3, and 4.1.16 shall be conducted in accordance with the methods as set forth below. The Director may approve a different test method or approve an alternative method upon written submission of such plan within the protocol submitted under Section 4.3.2. Compliance testing shall be conducted at the maximum permitted operating conditions corrected for ambient temperature unless otherwise specified by the Director. Compliance testing shall be conducted at maximum permitted capacity (in the absence of limits on a piece of equipment, the testing shall be conducted at maximum design capacity) unless otherwise approved by the Director in the protocol submitted under Section 4.3.2. a. Tests to determine compliance with TSP and PM10 emission limits shall be conducted in accordance with 40 C.F.R. Part 60 Appendix A Method 5, 5A, 5B, 5C, 5D, 5E, 5F, 5G, or 5H. b. Tests to determine compliance with SO2 emission limits shall be conducted in accordance with 40 C.F.R. Part 60 Appendix A Method 6, 6A, 6B, or 6C. c. Tests to determine compliance with CO emission limits shall be conducted in accordance with 40 C.F.R. Part 60 Appendix A Method 10, 10A, or 10B. d. Tests to determine compliance with NOx emission limits shall be conducted in accordance with 40 C.F.R. Part 60 Appendix A Method 7, 7A, 7B, 7C, 7D, or 7E. e. Tests to determine compliance with VOC emission limits shall be conducted in accordance with 40 C.F.R. Part 60 Appendix A Method 25, or 25A.
25	4.3.2	45CSR13, R13-2383, B.8., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06, G1	With regard to any testing required by the Director, the permittee shall submit to the Director of Air Quality a test protocol detailing the proposed test methods, the date, and the time the proposed testing is to take place, as well as identifying the sampling locations and other relevant information. The test protocol must be received by the Director no less than thirty (30) days prior to the date the testing is to take place. Test results shall be submitted to the Director no more than sixty (60) days after the date the testing takes place.
26	4.3.4	45CSR§30-5.1.c., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	The permittee shall stack test three of the combustion turbines to determine NO_x and CO emissions. The results of the testing shall be used to demonstrate compliance with the NO_x and CO emissions limits set forth Sections 4.1.2 and 4.1.3. The permittee shall alternate stack testing with a different set of three combustion turbines per permit term. Stack testing shall be completed no later than 18 months prior to the permit's expiration date.
27	4.4.1.	45CSR13, R13-2383, B.10. GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	For the purposes of determining compliance with the maximum natural gas consumption limit set forth in Section 4.1.4, the permittee shall maintain certified daily and monthly records. An example form is included as Attachment A. Such records shall be retained by the permittee for at least five (5) years. Certified records shall be made available to the Director or his duly authorized representative upon request.
28	4.4.3	45CSR§30-5.1.c. and 40 C.F.R. § 64.9 (b)	General recordkeeping requirements for CAM, (1) The owner or operator shall comply with the recordkeeping requirements of Sections 3.4.1 and 3.4.2. The owner or operator shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to 40 C.F.R. § 64.8 and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under 40 C.F.R. Part 64 (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions). (2) Instead of paper records, the owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements.
29	4.4.5.	45CSR13, R13-2383, B.9., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	For the purposes of determining compliance with the maximum fuel sulfur-content limit set forth in Section 4.1.7, the permittee shall either, once per calendar year: a. Obtain from the fuel supplier a document certifying the maximum total sulfur content of the fuel gas delivered to the facility; or b. Conduct, or have conducted, testing on the fuel gas delivered to the facility to determine maximum total sulfur content. This testing shall be in accordance with 40 C.F.R. § 60.335 (b) (10) and Section 4.3.2.

30	4.5.1	45CSR §30-5.1.c; 40 C.F.R. § 64.9 (a) (2)	A report under 40 C.F.R. Part 64 shall include, at a minimum, the information required in Section 3.5.8 and the following information, as applicable. a. Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken; b. Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and c. A description of the actions taken to implement a QIP during the reporting period as specified in 40 C.F.R. § 64.8. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring
31	4.5.2	45CSR16, 40 C.F.R. §§ 60.334 (j)(1)(i) and (j)(2), GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	For each affected unit that elects to continuously monitor parameters or emissions, or to periodically determine the fuel sulfur content or fuel nitrogen content under this subpart, the owner or operator shall submit reports of excess emissions and monitor downtime, in accordance with §60.7(c). Excess emissions shall be reported for all periods of unit operation, including startup, shutdown and malfunction. For the purpose of reports required under §60.7(c), periods of excess emissions and monitor downtime that shall be reported are defined as follows: (1) Nitrogen oxides. (i) For turbines using water or steam to fuel ratio monitoring: (A) An excess emission shall be any unit operating hour for which the average steam or water to fuel ratio, as measured by the continuous monitoring system, falls below the acceptable steam or water to fuel ratio needed to demonstrate compliance with §60.332, as established during the performance test required in §60.8. Any unit operating hour in which no water or steam is injected into the turbine shall also be considered an excess emission. (B) A period of monitor downtime shall be any unit operating hour in which water or steam is injected into the turbine, but the essential parametric data needed to determine the steam or water to fuel ratio are unavailable or invalid. (C) Each report shall include the average steam or water to fuel ratio, average fuel consumption, ambient conditions (temperature, pressure, and humidity), gas turbine load, and (if applicable) the nitrogen content of the fuel during each excess emission. You do not have to report ambient conditions if you opt to use the worst case ISO correction factor as specified in §60.334(b)(3)(ii), or if you are not using the ISO correction equation under the provisions of §60.335(b)(1). (2) Sulfur dioxide. If the owner or operator is required to monitor the sulfur content of the fuel under 40 C.F.R. §60.334 (h): (i) For samples of gaseous fuel and for oil samples obtained using daily sampling, flow proportional sampling, or sampling from the unit's storage tank, an excess emission occurs each unit operating hour included in the period beginning on the date and hour of any sample for which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8 weight percent and ending on the date and hour that a subsequent sample is taken that demonstrates compliance with the sulfur limit. (ii) If the option to sample each delivery of fuel oil has been selected, the owner or operator shall immediately switch to one of the other oil sampling options (*i.e.*, daily sampling, flow proportional sampling, or sampling from the unit's storage tank) if the sulfur content of a delivery exceeds 0.8 weight percent. The owner or operator shall continue to use one of the other sampling options until all of the oil from the delivery has been combusted, and shall evaluate excess emissions according to paragraph 4.5.2(2)(i) of this section. When all of the fuel from the delivery has been burned, the owner or operator may resume using the as delivered sampling option. (iii) A period of monitor downtime begins when a required sample is not taken by its due date. A period of monitor downtime also begins on the date and hour of a required sample, if invalid results are obtained. The period of monitor downtime shall include only unit operating hours, and ends on the date and hour of the next valid sample.

X Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

1	4.1.1.	45CSR13, R13-2383, A.1., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	Recordkeeping
2	4.1.2.	45CSR13, R13-2383, A.2., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	Recordkeeping.
3	4.1.3.	45CSR13, R13-2383, A.3., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	Recordkeeping.
4	4.1.4	45CSR13, R13-2383, A.4., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	Recordkeeping.
5	4.1.5	45CSR13, R13-2383, A.5., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	Monitoring.
6	4.1.6	45CSR13, R13-2383, A.6., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	Monitoring.
7	4.1.7	45CSR13, R13-2383, A.7., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	Gas testing; Recordkeeping.
8	4.1.8	45CSR13, R13-2383, A.8., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	Monitoring.
9	4.1.9	45CSR16, 40 C.F.R. § 60.332 (a), 45CSR13, R13-2383, A.8.a., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	Monitoring; Recordkeeping.
10	4.1.10	45CSR16, 40 C.F.R. § 60.332 (a) (1) (3) and (4), 45CSR13, R13-2383, A.8.a. through 3., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	Monitoring; Recordkeeping.
11	4.1.11.	45CSR16, 40 C.F.R. § 60.332 (b), 45CSR13, R13-2383, A.8.c., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	Monitoring; Recordkeeping.
12	4.1.12.	45CSR16, 40 C.F.R. § 60.333, 45CSR13, R13-2383, A.8.a., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	Testing; Recordkeeping.
13	4.1.13.	45CSR33, 40 C.F.R. Parts 72, 73, 74, 75, 76, 77, and 78. GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	Monitoring; Recordkeeping; Reporting.
14	4.2.1.	45CSR16, 40 C.F.R. § 60.334(a), 45SCR13, R13-2383, A.8.d., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	Testing; Recordkeeping; Reporting.
15	4.2.2.	45CSR16, 40 C.F.R. §§60.334(h)(1) and (3), 45SCR13, R13-2382, A.8.e., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	Monitoring; Recordkeeping.

16	4.2.3.	45CSR§30-5.1.c. and 40 CFR §§64.3(a), 64.3(b) and 64.6(c)(2)	Recordkeeping.
17	4.2.4.	45CSR§30-12.7. and 40 C.F.R. §§ 64.3 (a), 64.3 (b) and 64.6 (c) (2)	Monitoring; Recordkeeping.
18	4.2.5.	45CSR §30-5.1.c. and 40 C.F.R. §64.7(b)	Monitoring; Recordkeeping.
19	4.2.6.	45CSR§30-5.1.c., 40CFR§64.7(c)	Monitoring; Testing; Recordkeeping.
20	4.2.7.	45CSR§30-5.1.c., 40CFR§64.7(d)	Recordkeeping
21	4.2.8.	45CSR§30-5.1.c., 40CFR§64.7(e)	Recordkeeping
22	4.2.9.	45CSR§30-5.1.c., 40CFR§4.8.	Recordkeeping
23	4.2.10.	45CSR§30-5.1.c., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	Testing
24	4.3.1.	45CSR13, R13-2383, B.7., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	Testing; Recordkeeping; Reporting.
25	4.3.2.	45CSR13, R13-2382, B.8., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06, G1	Testing (Protocol)
26	4.3.4.	45CSR§30-5.1.c., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	Testing; Recordkeeping; Reporting.
27	4.4.1.	45CSR13, R13-2383, B.10. GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	Recordkeeping.
28	4.4.3	45CSR§30-5.1.c. and 40 C.F.R. § 64.9 (b)	Recordkeeping.
29	4.4.5	45CSR13, R13-2382, B.9., GS-01, GS-02, GS-03, GS-04, GS-05, GS06	Recordkeeping
30	4.5.1.	45CSR §30-5.1.c.) 45CSR40 C.F.R. § 64.9 (a) (2)	Reporting.
31	4.5.2	45CSR16, 40CFR§§60.334(j)(I)(i) and (j)(2), GS-01, GS-02, GS-03, GS-04, GS-05, GS-06	Reporting

Are you in compliance with all applicable requirements for this emission unit? _X_ Yes ___No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
G1	Emergency Generator	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.):

750 kW 60 Hz Diesel Generator Set with 1,300 gallon integral fuel tank

Manufacturer:	**Model number:**	**Serial number:**
Cummins Power Generation	750DQCB	00315269

Construction date:	**Installation date:**	**Modification date(s):**
06/13/2006 (Date of Manufacture)	02/01/2007	NA

Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 750kW

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
51.3 Gallons/Hour (fuel use)	13,851 Gallons (fuel use)	270 hours

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? X Yes ___ No	**If yes, is it?** ___ Indirect Fired X Direct Fired
Maximum design heat input and/or maximum horsepower rating: 1,135 HP	**Type and Btu/hr rating of burners:** 7.01 MMBtu/hr

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

No. 2 Diesel Fuel 51.3 Gallons/Hour, 13,851 Gallons/Year

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
No. 2 Diesel Fuel	15 ppm	NA	136,600 Btu/Gallon

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	3.23	0.44
Nitrogen Oxides (NO_X)	19.27	2.60
Lead (Pb)	NA	NA
Particulate Matter ($PM_{2.5}$)	0.39	0.06
Particulate Matter (PM_{10})	0.40	0.06
Total Particulate Matter (TSP)	0.40	0.06
Sulfur Dioxide (SO_2)	0.35	0.05
Volatile Organic Compounds (VOC)	0.98	0.13
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Benzene*	0.0054	0.0007
Toluene*	0.002	0.0003
Xylenes*	0.0014	0.0002
Formaldehyde*	0.0006	0.0001
Acetaldehyde*	0.0002	0.0001
Acrolein*	0.0001	0.0001
Naphthalene*	0.0009	0.0001
*Not contained in permit.		
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
Regulated Pollutants other than Criteria and HAP	PPH	
		TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

1. Emission limits from R30-09900080-2014, Conditions 4.1.16 & 4.1.17 and 45CSR13, Permit No. R13-2383C

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

<table>
<tr><th></th><th>Existing Permit Condition</th><th>Underlying Requirement</th><th>Applicable Requirement</th></tr>
<tr><td>1</td><td>4.1.14</td><td>45CSR16, 40 C.F.R. § 60.4211 (a), G1</td><td>If you are an owner or operator and must comply with the emission standards specified in 40 C.F.R. Part 60 Subpart IIII, you must do all of the following, except as permitted under 40 C.F.R. § 60.4211 (g) [Condition 4.1.19]:
(1) Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions;
(2) Change only those emission-related settings that are permitted by the manufacturer; and
(3) Meet the requirements of 40 C.F.R. Parts 89, 94, and/or 1068, as they apply to you.</td></tr>
<tr><td>2</td><td>4.1.15.</td><td>45CSR13, R13-2383, A.10., G1</td><td>The Cummins Model QSK23-G3 NR1 black-start generator shall not exceed the specified nominal brake horsepower and heat input, shall combust only the specified fuels below the limited sulfur content, and shall not exceed the specified maximum hours of operation in the following table:
<table>
<tr><th>Source ID No.</th><th>Brake Horsepower</th><th>MDHI (mmBTU/hr)</th><th>Fuel</th><th>Sulfur Content (%-by weight)</th><th>Maximum Hours of Operation</th></tr>
<tr><td>G1</td><td>1,135</td><td>7.01</td><td>No. 2 Fuel Oil</td><td>0.05</td><td>270</td></tr>
</table></td></tr>
<tr><td>3</td><td>4.1.16.</td><td>45CSR13, R13-2383, A.11., G1</td><td>Maximum hourly and annual criteria pollutant emissions from the operation of G1 shall not exceed the limits as specified in the following table:
<table>
<tr><th>Pollutant</th><th>pounds/hour</th><th>tons/year</th></tr>
<tr><td>Carbon Monoxide (CO)</td><td>3.23</td><td>0.44</td></tr>
<tr><td>Nitrogen Oxides (NO_x)</td><td>19.27</td><td>2.60</td></tr>
<tr><td>Particulate Matter (PM)</td><td>0.40</td><td>0.06</td></tr>
<tr><td>Particulate Matter < 10 microns (PM_{10})</td><td>0.40</td><td>0.06</td></tr>
<tr><td>Sulfur Dioxide (SO2)</td><td>0.35</td><td>0.05</td></tr>
<tr><td>Volatile Organic Compounds (VOCs)</td><td>0.98</td><td>0.13</td></tr>
</table>
Compliance for Nitrogen Oxides (NO_x) emissions will be shown by the more stringent requirement in Section 4.1.17.</td></tr>
<tr><td>4</td><td>4.1.17.</td><td>45CSR16, 40 C.F.R. §§ 60.4205 (a) and 60.4206 and Table 1, G1</td><td>Maximum hourly emissions calculations based on Table 1 of 40 C.F.R. Part 60 Subpart IIII as specified in 40 C.F.R. § 60.4205 (a) for G1are specified in the following table:
<table>
<tr><th>Pollutant</th><th>LB/hr</th></tr>
<tr><td>Carbon Monoxide (CO)</td><td>21.27</td></tr>
<tr><td>Nitrogen Oxides (NO_x)</td><td>17.26</td></tr>
<tr><td>Particulate Matter (PM)</td><td>1.00</td></tr>
<tr><td>HC</td><td>2.50</td></tr>
</table>
Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in § 60.4205 over the entire life of the engine.</td></tr>
</table>

5	4.1.18.	45CSR16, 40 C.F.R. § 60.4211 (f), G1	If you own or operate an emergency stationary ICE, you must operate the emergency stationary ICE according to the requirements in paragraphs 4.1.18(1) through (3). In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs 4.1.18(1) through (3), is prohibited. If you do not operate the engine according to the requirements in paragraphs 4.1.18(1) through (3), the engine will not be considered an emergency engine under 40 C.F.R. Part 60 Subpart IIII and must meet all requirements for nonemergency engines. (1) There is no time limit on the use of emergency stationary ICE in emergency situations. (2) You may operate your emergency stationary ICE for any combination of the purposes specified in paragraphs 4.1.18(2)(i) through (iii) for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph 4.1.18(3) counts as part of the 100 hours per calendar year allowed by this paragraph 4.1.18(2). (i) Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year. (ii) Emergency stationary ICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §60.17), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3. (iii) Emergency stationary ICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency. (3) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph 4.1.18(2). Except as provided in paragraph 4.1.18(3)(i), the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. (i) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met: (A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator; (B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region. (C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines. (D) The power is provided only to the facility itself or to support the local transmission and distribution system. (E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.
6	4.1.19.	45CSR16, 40 C.F.R. §60.4211 (g)(3), G1	If you do not install, configure, operate, and maintain your engine and control device according to the manufacturer's emission-related written instructions, or you change emission-related settings in a way that is not permitted by the manufacturer, you must demonstrate compliance as follows: If you are an owner or operator of a stationary CI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer. You must conduct subsequent performance testing every 8,760 hours of engine operation or 3 years, whichever comes first, thereafter to demonstrate compliance with the applicable emission standards.

7	4.1.20.	45CSR16, 40 C.F.R. § 60.4207 (b), 40C.F.R. § 80.510 (b)	Beginning October 1, 2010, G1 shall only consume diesel fuel meeting following per-gallon standards: a. Maximum sulfur content of 15 ppm; b. Cetane index or aromatic content as follows: (1) A minimum cetane index of 40; or (2) A minimum aromatic content of 35 % by volume.
8	4.3.1.	45CSR13, R13-2383, B.7., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06, G1	Tests that are required by the Director to determine compliance with the emission limitations set forth in Sections 4.1.2, 4.1.3, and 4.1.16 shall be conducted in accordance with the methods as set forth below. The Director may approve a different test method or approve an alternative method upon written submission of such plan within the protocol submitted under Section 4.3.2. Compliance testing shall be conducted at the maximum permitted operating conditions corrected for ambient temperature unless otherwise specified by the Director. Compliance testing shall be conducted at maximum permitted capacity (in the absence of limits on a piece of equipment, the testing shall be conducted at maximum design capacity) unless otherwise approved by the Director in the protocol submitted under Section 4.3.2. a. Tests to determine compliance with TSP and PM10 emission limits shall be conducted in accordance with 40 C.F.R. Part 60 Appendix A Method 5, 5A, 5B, 5C, 5D, 5E, 5F, 5G, or 5H. b. Tests to determine compliance with SO2 emission limits shall be conducted in accordance with 40 C.F.R. Part 60 Appendix A Method 6, 6A, 6B, or 6C. c. Tests to determine compliance with CO emission limits shall be conducted in accordance with 40 C.F.R. Part 60 Appendix A Method 10, 10A, or 10B. d. Tests to determine compliance with NOX emission limits shall be conducted in accordance with 40 C.F.R. Part 60 Appendix A Method 7, 7A, 7B, 7C, 7D, or 7E. e. Tests to determine compliance with VOC emission limits shall be conducted in accordance with 40 C.F.R. Part 60 Appendix A Method 25, or 25A.
9	4.3.2.	45CSR13, R13-2383, B.8., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06, G1	With regard to any testing required by the Director, the permittee shall submit to the Director of Air Quality a test protocol detailing the proposed test methods, the date, and the time the proposed testing is to take place, as well as identifying the sampling locations and other relevant information. The test protocol must be received by the Director no less than thirty (30) days prior to the date the testing is to take place. Test results shall be submitted to the Director no more than sixty (60) days after the date the testing takes place.
10	4.3.3.	45CSR13, R13-2383, B.12., G1	For the purposes of determining compliance with the maximum sulfur content limits set forth in Section 4.1.15, the applicant shall, at a minimum of once per calendar year, obtain from the No. 2 fuel oil supplier a certification of the sulfur content of the fuel supplied. An alternative means of determining compliance with Section 4.1.15 shall be subject to prior approval from the Director.
11	4.3.5	45CSR16,40 C.F.R. §60.4212, G1	Owners and operators of stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests pursuant to 40 C.F.R. 60, Subpart IIII must do so according to paragraphs (a) through (e) of this section. (a) The performance test must be conducted according to the in-use testing procedures in 40 CFR part 1039, subpart F, for stationary CI ICE with a displacement of less than 10 liters per cylinder, and according to 40 CFR part 1042, subpart F, for stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder. (b) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR part 1039 must not exceed the not-to-exceed (NTE) standards for the same model year and maximum engine power as required in 40 CFR §1039.101(e) and 40 CFR §1039.102(g)(1), except as specified in 40 CFR §1039.104(d). This requirement starts when NTE requirements take effect for nonroad diesel engines under 40 CFR part 1039. (c) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR §89.112 or 40 CFR §94.8, as applicable, must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in 40 CFR §89.112 or 40 CFR §94.8, as applicable, determined from the following equation: NTE requirement for each pollutant = (1.25) x (STD) (Eq. 1) Where: STD = The standard specified for that pollutant in 40 CFR §89.112 or 40 CFR §94.8, as

			applicable. Alternatively, stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR §89.112 or 40 CFR §94.8 may follow the testing procedures specified in §60.4213 of this subpart, as appropriate. (d) Exhaust emissions from stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in §60.4204(a), §60.4205(a), or §60.4205(c) must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in §60.4204(a), §60.4205(a), or §60.4205(c), determined from the equation in paragraph (c) of this section. Where: STD = The standard specified for that pollutant in §60.4204(a), §60.4205(a), or §60.4205(c). Alternatively, stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in §60.4204(a), §60.4205(a), or §60.4205(c) may follow the testing procedures specified in §60.4213, as appropriate. (e) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR part 1042 must not exceed the NTE standards for the same model year and maximum engine power as required in 40 CFR 1042.101(c).
12	4.4.2.	45CSR13, R13-2383, B.11., G1	For the purposes of determining compliance with the maximum hours of operation limit set forth in Section 4.1.15, the permittee shall maintain certified daily and monthly records of the generator hours of operation. An example form is included as Attachment A. Such records shall be retained by the permittee for at least five (5) years. Certified records shall be made available to the Director or his duly authorized representative upon request.
13	4.4.4.	45CSR16, 40 C.F.R. § 60.2411 (b) (3), G1	Permittee must comply with the emissions standards specified in 40 C.F.R. § 60.4205 (a) by keeping records of engine manufacturer data indicating compliance with the standards.
14	4.4.6.	45CSR16, 40CFR§60.4214(d), G1	If you own or operate an emergency stationary CI ICE with a maximum engine power more than 100 HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §§60.4211(f)(2)(ii) and (iii) or that operates for the purposes specified in §60.4211(f)(3)(i), you must submit an annual report according to the requirements in paragraphs (1) through (3) of this section. (1) The report must contain the following information: (i) Company name and address where the engine is located. (ii) Date of the report and beginning and ending dates of the reporting period. (iii) Engine site rating and model year. (iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place. (v) Hours operated for the purposes specified in §§60.4211(f)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in §§60.4211(f)(2)(ii) and (iii). (vi) Number of hours the engine is contractually obligated to be available for the purposes specified in §§60.4211(f)(2)(ii) and (iii). (vii) Hours spent for operation for the purposes specified in §60.4211(f)(3)(i), including the date, start time, and end time for engine operation for the purposes specified in §60.4211(f)(3)(i). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine. (2) The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year. (3) The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (*www.epa.gov/cdx*). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in §60.4.

X Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

1	4.1.14	45CSR16, 40CFR§60.4211(a), G1	Recordkeeping
2	4.1.15.	45CSR13, R13-2383, A.10., G1	Recordkeeping
3	4.1.16.	45CSR13, R13-2383, A.11., G1	Testing; Recordkeeping; Reporting.
4	4.1.17.	45CSR16, 40 C.F.R. § 60.4205 (a) and Table 1, G1	Testing; Recordkeeping; Reporting.
5	4.1.18.	45CSR16, 40CFR§60.4211(F), G1	Recordkeeping
6	4.1.19.	45CSR16, 40CFR§60.4211(g)(3), G1	Recordkeeping
7	4.1.20.	45CSR16, 40CFR§60.4207(b), 40CFR§80.510(b), G1	Recordkeeping
8	4.3.1.	45CSR13, R13-2383, B.7., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06, G1	Testing
9	4.3.2.	45CSR13, R13-2383, B.8., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06, G1	Testing
10	4.3.3	45CSR13, R13-2383, B.12., G1	Recordkeeping.
11	4.3.5	45CSR16, 40CFR§60.4212, G1	Testing
12	4.4.2.	45CSR13, R13-2383, B.11., G1	Recordkeeping.
13	4.4.4.	45CSR16, 40 C.F.R. § 60.2411 (b) (3), G1	Recordkeeping.
14	4.4.6.	45CSR16, 40CFR§60.4214(d), G1	Reporting

Are you in compliance with all applicable requirements for this emission unit? _X_ Yes ___No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT G

AIR POLLUTION CONTROL DEVICE FORM(S)

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number:	**List all emission units associated with this control device.**	
OC-01-1, OC-01-2, OC-02-1, OC-02-2, OC-03-1, OC-03-2, OC-04-1, OC-04-2, OC-05-1, OC-05-2, OC-06-1, OC-06-2	GS-01-1, GS-01-2, GS-02-1, GS-02-2, GS-03-1, GS-03-2, GS-04-1, GS-04-2, GS-05-1, GS-05-2, GS-06-1, GS-06-2	
Manufacturer:	**Model number:**	**Installation date:**
Engelhard	CAMET	07/01/01

Type of Air Pollution Control Device:

___ Baghouse/Fabric Filter ___ Venturi Scrubber ___ Multiclone

___ Carbon Bed Adsorber ___ Packed Tower Scrubber ___ Single Cyclone

___ Carbon Drum(s) ___ Other Wet Scrubber ___ Cyclone Bank

___ Catalytic Incinerator ___ Condenser ___ Settling Chamber

___ Thermal Incinerator ___ Flare _X_ Other (describe) Oxidation Catalyst

___ Wet Plate Electrostatic Precipitator ___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Carbon Monoxide (CO)	100%	80%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

Turbine exhaust gases pass through a catalyst bed to oxidize CO and hydrocarbons to CO2 and water.

Is this device subject to the CAM requirements of 40 C.F.R. 64? _X_ Yes ___ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

SEE ATTACHMENT H

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number:	**List all emission units associated with this control device.**	
WI-01-1, WI -01-2, WI -02-1, WI -02-2, WI -03-1, WI -03-2, WI -04-1, WI -04-2, WI -05-1, WI -05-2, WI -06-1, WI -06-2	GS-01-1, GS-01-2, GS-02-1, GS-02-2, GS-03-1, GS-03-2, GS-04-1, GS-04-2, GS-05-1, GS-05-2, GS-06-1, GS-06-2	
Manufacturer:	**Model number:**	**Installation date:**
Pratt & Whitney	FT8 Twin Pac	07/01/01

Type of Air Pollution Control Device:

___ Baghouse/Fabric Filter ___ Venturi Scrubber ___ Multiclone

___ Carbon Bed Adsorber ___ Packed Tower Scrubber ___ Single Cyclone

___ Carbon Drum(s) ___ Other Wet Scrubber ___ Cyclone Bank

___ Catalytic Incinerator ___ Condenser ___ Settling Chamber

___ Thermal Incinerator ___ Flare _X_ Other (describe) Water Injection System

___ Wet Plate Electrostatic Precipitator ___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Nitrogen Oxides (NOx)	Inhibits NOx Formation	55%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

Water is injected into the flame area of each turbine combuster, lowering the flame temperature which reduces thermal NOx formation.

Is this device subject to the CAM requirements of 40 C.F.R. 64? ___ Yes _X_ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.** Sources are subject to requirements under 40CFR60 Subpart GG.

Describe the parameters monitored and/or methods used to indicate performance of this control device.

Fuel consumption and the ratio of water to fuel being fired in the turbine.

ATTACHMENT H

COMPLIANCE ASSURANCE MONITORING (CAM) FORM

ATTACHMENT H - Compliance Assurance Monitoring (CAM) Plan Form

For definitions and information about the CAM rule, please refer to 40 CFR Part 64. Additional information (including guidance documents) may also be found at http://www.epa.gov/ttn/emc/cam.html

CAM APPLICABILITY DETERMINATION

1) Does the facility have a PSEU (Pollutant-Specific Emissions Unit considered separately with respect to **EACH** regulated air pollutant) that is subject to CAM (40 CFR Part 64), which must be addressed in this CAM plan submittal? To determine applicability, a PSEU must meet **all** of the following criteria (*If No, then the remainder of this form need not be completed*): ☒ YES ☐ NO

a. The PSEU is located at a major source that is required to obtain a Title V permit;

b. The PSEU is subject to an emission limitation or standard for the applicable regulated air pollutant that is NOT exempt;

LIST OF EXEMPT EMISSION LIMITATIONS OR STANDARDS:

- NSPS (40 CFR Part 60) or NESHAP (40 CFR Parts 61 and 63) proposed after 11/15/1990.
- Stratospheric Ozone Protection Requirements.
- Acid Rain Program Requirements.
- Emission Limitations or Standards for which a WVDEP Division of Air Quality Title V permit specifies a continuous compliance determination method, as defined in 40 CFR §64.1.
- An emission cap that meets the requirements specified in 40 CFR §70.4(b)(12).

c. The PSEU uses an add-on control device (as defined in 40 CFR §64.1) to achieve compliance with an emission limitation or standard;

d. The PSEU has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than the Title V Major Source Threshold Levels; AND

e. The PSEU is NOT an exempt backup utility power emissions unit that is municipally-owned.

BASIS OF CAM SUBMITTAL

2) Mark the appropriate box below as to why this CAM plan is being submitted as part of an application for a Title V permit:

☒ RENEWAL APPLICATION. **ALL** PSEUs for which a CAM plan has NOT yet been approved need to be addressed in this CAM plan submittal. ***Big Sandy has an approved CAM Plan. We are requesting a modification to the thermocouple calibration to ±0.75% instead of ±2°F per new supplier specification.***

☐ INITIAL APPLICATION (submitted after 4/20/98). **ONLY** large PSEUs (i. e., PSEUs with potential post-control device emissions of an applicable regulated air pollutant that are equal to or greater than Major Source Threshold Levels) need to be addressed in this CAM plan submittal.

☐ SIGNIFICANT MODIFICATION TO LARGE PSEUs. **ONLY** large PSEUs being modified after 4/20/98 need to be addressed in this cam plan submittal. For large PSEUs with an approved CAM plan, Only address the appropriate monitoring requirements affected by the significant modification.

3) [a] BACKGROUND DATA AND INFORMATION					
Complete the following table for **all** PSEUs that need to be addressed in this CAM plan submittal. This section is to be used to provide background data and information for each PSEU In order to supplement the submittal requirements specified in 40 CFR §64.4. If additional space is needed, attach and label accordingly.					
PSEU DESIGNATION	DESCRIPTION	POLLUTANT	CONTROL DEVICE	[b] EMISSION LIMITATION or STANDARD	[c] MONITORING REQUIREMENT
GS-01-1; GS-01-2; GS-02-1; GS-02-2; GS-03-1; GS-03-2; GS-04-1; GS-04-2; GS-05-1; GS-05-2; GS-06-1; GS-06-2	Gas Turbines	Carbon Monoxide (CO)	Oxidation Catalyst Bed (for each turbine)	156.74 tons per year for all trubines combined. R-30-09900080-2009, Condition 4.1.3	The permittee shall calibrate, maintain, and operate a continuous temperature monitoring system with recorder consisting of nine (9) thermocouples to determine "calculated daily average Combustion Turbine Exhaust Gas Temperature (EGT)" at each Combustion Turbine Exhaust before the gases enter the power turbine inlet. The thermocouples used in the monitoring system are to be accurate within plus or minus 0.75 percent per the thermocouple manufacturer's information.
EXAMPLE Boiler No. 1	Wood-Fired Boiler	PM	Multiclone	45CSR§2-4.1.c.; 9.0 lb/hr	Monitor pressure drop across multiclone: Weekly inspection of multiclone

[a] If a control device is common to more than one PSEU, one monitoring plan may be submitted for the control device with the affected PSEUs identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a). If a single PSEU is controlled by more than one control device similar in design and operation, one monitoring plan for the applicable control devices may be submitted with the applicable control devices identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a).

[b] Indicate the emission limitation or standard for any applicable requirement that constitutes an emission limitation, emission standard, or standard of performance (as defined in 40 CFR §64.1).

[c] Indicate the monitoring requirements for the PSEU that are required by an applicable regulation or permit condition.

CAM MONITORING APPROACH CRITERIA			
Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide monitoring data and information for EACH indicator selected for EACH PSEU in order to meet the monitoring design criteria specified in 40 CFR §64.3 and §64.4. if more than two indicators are being selected for a PSEU or if additional space is needed, attach and label accordingly with the appropriate PSEU designation, pollutant, and indicator numbers.			
4a) PSEU Designation: GS-01-1; GS-01-2; GS-02-1; GS-02-2; GS-03-1; GS-03-2; GS-04-1; GS-04-2; GS-05-1; GS-05-2; GS-06-1; GS-06-2	**4b) Pollutant:** Carbon Monoxide (CO)	**4c) [a] Indicator No. 1:** Calculated Daily Average Catalyst Inlet Exhaust Temperature	**4d) [a] Indicator No. 2:**
5a) GENERAL CRITERIA Describe the MONITORING APPROACH used to measure the indicators:		Monitor Turbine Gas Path Temperature via nine thermocouples at the power turbine inlet and use for calculation of catalyst inlet temperature.	
[b] Establish the appropriate INDICATOR RANGE or the procedures for establishing the indicator range which provides a reasonable assurance of compliance:		Exhaust gas temperatures from 800 - 1390 degrees F ensure the catalyst is operating as designed.	
5b) PERFORMANCE CRITERIA Provide the SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA, such as detector location, installation specifications, and minimum acceptable accuracy:		Thermocouples used in the monitoring system are accurate to within 0.75 percent per manufacturer's information.	
[c] For new or modified monitoring equipment, provide VERIFICATION PROCEDURES, including manufacturer's recommendations, TO CONFIRM THE OPERATIONAL STATUS of the monitoring:		NA; Temperature thermocouples are unmodified original equipment.	
Provide QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES that are adequate to ensure the continuing validity of the data, (i.e., daily calibrations, visual inspections, routine maintenance, RATA, etc.):		Data is considered valid if exhaust gas temperature profile is within known parameters. Anomalous readings will be investigated. Thermocouples will be calibrated according to manufacturer's recommendations.	
[d] Provide the MONITORING FREQUENCY:		Continuous during normal turbine operation, except for periods of startup, shutdown, and malfunction.	

CAM MONITORING APPROACH CRITERIA		
Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide monitoring data and information for EACH indicator selected for EACH PSEU in order to meet the monitoring design criteria specified in 40 CFR §64.3 and §64.4. if more than two indicators are being selected for a PSEU or if additional space is needed, attach and label accordingly with the appropriate PSEU designation, pollutant, and indicator numbers.		
Provide the DATA COLLECTION PROCEDURES that will be used:	Temperature data will be recorded once each clock hour at half-past the hour (to avoid most dispatched startups occurring at the beginning of the hour). If, at the recordation, the turbine is not operating normally (as defined above), the temperature for that hour will be deemed invalid and omitted from the calendar daily average calculation.	
Provide the DATA AVERAGING PERIOD for the purpose of determining whether an excursion or exceedance has occurred:	Calendar day average of up to 24 valid hourly data recordations. An excursion will be defined as a daily average temperature below 800 °F or greater than 1,390°F. Daily average temperature will be defined as the average of all valid hourly temperature recordations in a calendar day. See discussion in Monitoring Frequency and Data Collection Procedures for description of valid data.	

[a] Describe all indicators to be monitored which satisfies 40 CFR §64.3(a). Indicators of emission control performance for the control device and associated capture system may include measured or predicted emissions (including visible emissions or opacity), process and control device operating parameters that affect control device (and capture system) efficiency or emission rates, or recorded findings of inspection and maintenance activities.

[b] Indicator Ranges may be based on a single maximum or minimum value or at multiple levels that are relevant to distinctly different operating conditions, expressed as a function of process variables, expressed as maintaining the applicable indicator in a particular operational status or designated condition, or established as interdependent between more than one indicator. For CEMS, COMS, or PEMS, include the most recent certification test for the monitor.

[c] The verification for operational status should include procedures for installation, calibration, and operation of the monitoring equipment, conducted in accordance with the manufacturer's recommendations, necessary to confirm the monitoring equipment is operational prior to the commencement of the required monitoring.

[d] Emission units with post-control PTE ≥ 100 percent of the amount classifying the source as a major source (i.e., Large PSEU) must collect four or more values per hour to be averaged. A reduced data collection frequency may be approved in limited circumstances. Other emission units must collect data at least once per 24 hour period.

RATIONALE AND JUSTIFICATION

Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide rationale and justification for the selection of EACH indicator and monitoring approach and EACH indicator range in order to meet the submittal requirements specified in 40 CFR §64.4.

6a) PSEU Designation:	6b) Regulated Air Pollutant:
GS-01-1; GS-01-2; GS-02-1; GS-02-2; GS-03-1; GS-03-2; GS-04-1; GS-04-2; GS-05-1; GS-05-2; GS-06-1; GS-06-2	Carbon Monoxide

7) **INDICATORS AND THE MONITORING APPROACH**: Provide the rationale and justification for the selection of the indicators and the monitoring approach used to measure the indicators. Also provide any data supporting the rationale and justification. Explain the reasons for any differences between the verification of operational status or the quality assurance and control practices proposed, and the manufacturer's recommendations. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

Inlet exhaust gas temperature (EGT) is the primary determining factor of catalyst performance. See attached documents: Engelhard's Catalyst Handling and Maintenance Procedures; Pratt & Whitney FT8 CO Catalyst Inlet Temp vs Ambient Temperature ; and Pratt & Whitney FT8 Operating Parameters.

8) **INDICATOR RANGES**: Provide the rationale and justification for the selection of the indicator ranges. The rationale and justification shall indicate how **EACH** indicator range was selected by either a COMPLIANCE OR PERFORMANCE TEST, a TEST PLAN AND SCHEDULE, or by ENGINEERING ASSESSMENTS. Depending on which method is being used for each indicator range, include the specific information required below for that specific indicator range. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

- COMPLIANCE OR PERFORMANCE TEST (Indicator ranges determined from control device operating parameter data obtained during a compliance or performance test conducted under regulatory specified conditions or under conditions representative of maximum potential emissions under anticipated operating conditions. Such data may be supplemented by engineering assessments and manufacturer's recommendations). The rationale and justification shall INCLUDE a summary of the compliance or performance test results that were used to determine the indicator range, and documentation indicating that no changes have taken place that could result in a significant change in the control system performance or the selected indicator ranges since the compliance or performance test was conducted.

- TEST PLAN AND SCHEDULE (Indicator ranges will be determined from a proposed implementation plan and schedule for installing, testing, and performing any other appropriate activities prior to use of the monitoring). The rationale and justification shall INCLUDE the proposed implementation plan and schedule that will provide for use of the monitoring as expeditiously as practicable after approval of this CAM plan, except that in no case shall the schedule for completing installation and beginning operation of the monitoring exceed 180 days after approval.

- ENGINEERING ASSESSMENTS (Indicator Ranges or the procedures for establishing indicator ranges are determined from engineering assessments and other data, such as manufacturers' design criteria and historical monitoring data, because factors specific to the type of monitoring, control device, or PSEU make compliance or performance testing unnecessary). The rationale and justification shall INCLUDE documentation demonstrating that compliance testing is not required to establish the indicator range.

RATIONALE AND JUSTIFICATION:

Engineering assessment provided by Engelhard's Catalyst Handling and Maintenance Procedures document, the Pratt & Whitney FT8 CO Catalyst vs Inlet Temperature document, and the Pratt & Whitney FT8 Operating Parameters document.
Historical site operating information.

Pratt & Whitney Thermocouple Information (Excerpts)

Pratt & Whitney

Purchase Performance Specification No. 2425 Rev.C

This specification provides requirements for a Temperature Probe for an industrial gas turbine engine.

The product created for this specification also requires conformance to PWA PPS 2000 requirements.

November 26, 2002

1.4.7 Functional Performance

1.4.7.1 Accuracy

The EGT probe shall meet the required accuracy of +- 4 Degrees F from 32 Degrees F to 530 Degrees F and within +- 3/4 of 1 percent from 530 Degrees F to 2300 Degrees F.

ENGELHARD

Change the Nature of things

Catalyst Handling and Maintenance

PROCEDURES
FOR AN
ENGELHARD
CARBON MONOXIDE CONVERTER SYSTEM

PRATT & WHITNEY

Engelhard Job # 6196

REV.0

ISSUED 12/28/99

Pratt & Whitney Job

Performance Data — One Turbine / Stack

GIVEN / CALCULATED DATA	CASE	1	2	3	4	5	6
	AMBIENT	-15	-15	-15	-15	59	59
	LOAD, %	100	75	50	25	100	75
	FUEL	NG	NG	NG	NG	NG	NG
	TURBINE EXHAUST FLOW, lb/sec	215.8	195.7	165.7	131.9	190	167.9
	TURBINE EXHAUST FLOW, lb/hr	776,880	704,520	596,520	474,840	684,000	604,440
TURBINE EXHAUST GAS ANALYSIS, % VOL.	- N_2	73.75	74.50	75.05	75.71	73.00	73.61
	O_2	14.16	15.18	15.94	16.89	13.69	14.46
	CO_2	2.89	2.47	2.16	1.76	3.02	2.71
	H_2O	8.32	6.96	5.96	4.74	9.42	8.35
	Ar	0.88	0.89	0.89	0.90	0.87	0.87
	GIVEN TURBINE CO, ppmvd @ 15% O_2	80	130	170	210	80	130
	CALC. TURBINE CO, lb/hr	52.1	65.2	62.7	50.0	48.3	61.9
	CALC. GAS MOL. WT.	28.32	28.43	28.51	28.61	28.21	28.30
	GIVEN GAS TEMP. @ CO CATALYST, °F (+/-25)	729	642	598	549	840	791
DESIGN REQUIREMENTS	CO OUT, ppmvd @ 15% O_2	25	25	25	25	25	25
	CO PRESSURE DROP - "WG MAX.						
	GUARANTEED PERFORMANCE DATA						
	CO CONVERSION, % - Min.	83.9%	84.4%	86.0%	88.1%	86.5%	87.6%
	CO OUT, lb/hr - Max.	8.4	10.2	8.8	5.9	6.5	7.7
	CO OUT, ppmvd @ 15% O_2	12.9	20.3	23.8	25.0	10.8	16.1
	CO PRESSURE DROP, "WG - Max.	3.5	2.7	2.1	1.5	3.4	2.8

GIVEN / CALCULATED DATA	CASE	7	8	9	10	11	12
	AMBIENT	59	59	95	95	95	95
	LOAD, %	50	25	100	75	50	25
	FUEL	NG	NG	NG	NG	NG	NG
	TURBINE EXHAUST FLOW, lb/sec	142.4	113.8	168.5	155	131.3	105.6
	TURBINE EXHAUST FLOW, lb/hr	512,640	409,680	606,600	558,000	472,680	380,160
TURBINE EXHAUST GAS ANALYSIS, % VOL.	- N_2	74.18	74.86	71.73	72.15	72.73	73.42
	O_2	15.28	16.28	13.41	13.90	14.70	15.73
	CO_2	2.38	1.96	2.99	2.80	2.47	2.04
	H_2O	7.28	6.01	11.02	10.29	9.24	7.94
	Ar	0.88	0.89	0.85	0.86	0.86	0.87
	GIVEN TURBINE CO, ppmvd @ 15% O_2	170	210	80	130	170	210
	CALC. TURBINE CO, lb/hr	59.7	48.2	42.6	59.4	57.8	47.0
	CALC. GAS MOL. WT.	28.39	28.49	28.03	28.09	28.18	28.28
	GIVEN GAS TEMP. @ CO CATALYST, °F (+/-25)	743	693	884	857	811	758
DESIGN REQUIREMENTS	CO OUT, ppmvd @ 15% O_2	25	25	25	25	25	25
	CO PRESSURE DROP - "WG MAX.						
	GUARANTEED PERFORMANCE DATA						
	CO CONVERSION, % - Min.	89.1%	91.1%	88.2%	88.9%	90.4%	92.2%
	CO OUT, lb/hr - Max.	6.5	4.3	5.0	6.6	5.5	3.7
	CO OUT, ppmvd @ 15% O_2	18.5	18.8	9.5	14.4	16.3	16.4
	CO PRESSURE DROP, "WG - Max.	2.1	1.5	3.1	2.7	2.1	1.5

Performance Data — One Turbine / Stack

GIVEN / CALCULATED DATA	CASE	13	14	15	16	17	18
	AMBIENT	-15	-15	-15	-15	59	59
	LOAD, %	100	75	50	25	100	75
	FUEL	No. 2 Oil	No. 2 Oil	No. 2 Oil	No. 2 Oil	No. 2 Oil	No. 2 Oil
TURBINE EXHAUST FLOW, lb/sec		210.2	187.6	158.9	126.9	187.7	165.6
TURBINE EXHAUST FLOW, lb/hr		756,720	675,360	572,040	456,840	675,720	596,160
TURBINE EXHAUST GAS ANALYSIS, % VOL. -	N_2	74.39	75.04	75.68	76.40	73.43	74.09
	O_2	14.65	15.44	16.22	17.17	13.82	14.59
	CO_2	3.70	3.27	2.86	2.33	4.10	3.68
	H_2O	6.38	5.36	4.34	3.19	7.78	6.76
	Ar	0.88	0.89	0.90	0.91	0.87	0.88
GIVEN TURBINE CO, ppmvd @ 15% O_2		25	35	55	140	25	35
CALC. TURBINE CO, lb/hr		15.4	17.0	19.6	32.2	15.3	17.0
CALC. GAS MOL. WT.		28.66	28.73	28.80	28.87	28.55	28.62
GIVEN GAS TEMP. @ CO CATALYST, °F (+/-25)		689	636	597	551	840	796
DESIGN REQUIREMENTS	CO OUT, ppmvd @ 15% O_2	25	25	25	25	25	25
	CO PRESSURE DROP - "WG MAX.						
GUARANTEED PERFORMANCE DATA							
CO CONVERSION, % - Min.		84.0%	85.0%	86.6%	88.7%	86.7%	87.9%
CO OUT, lb/hr - Max.		2.5	2.6	2.6	3.6	2.0	2.1
CO OUT, ppmvd @ 15% O_2		4.0	5.3	7.4	15.9	3.3	4.2
CO PRESSURE DROP, "WG - Max.		3.1	2.6	2.0	1.4	3.3	2.7

GIVEN / CALCULATED DATA	CASE	19	20	21	22	23	24
	AMBIENT	59	59	95	95	95	95
	LOAD, %	50	25	100	75	50	25
	FUEL	No. 2 Oil	No. 2 Oil	No. 2 Oil	No. 2 Oil	No. 2 Oil	No. 2 Oil
TURBINE EXHAUST FLOW, lb/sec		140.3	112.3	165.4	146.2	128.9	100.5
TURBINE EXHAUST FLOW, lb/hr		505,080	404,280	595,440	526,320	464,040	361,800
TURBINE EXHAUST GAS ANALYSIS, % VOL. -	N_2	74.82	75.60	72.15	72.74	73.47	74.21
	O_2	15.46	16.50	13.53	14.25	15.08	16.07
	CO_2	3.22	2.64	4.06	3.68	3.23	2.68
	H_2O	5.61	4.36	9.40	8.46	7.35	6.16
	Ar	0.89	0.90	0.86	0.87	0.87	0.88
GIVEN TURBINE CO, ppmvd @ 15% O_2		55	140	25	35	55	140
CALC. TURBINE CO, lb/hr		19.6	32.6	13.5	15.0	18.2	29.8
CALC. GAS MOL. WT.		28.70	28.77	28.37	28.43	28.51	28.58
GIVEN GAS TEMP. @ CO CATALYST, °F (+/-25)		752	703	886	848	817	760
DESIGN REQUIREMENTS	CO OUT, ppmvd @ 15% O_2	25	25	25	25	25	25
	CO PRESSURE DROP - "WG MAX.						
GUARANTEED PERFORMANCE DATA							
CO CONVERSION, % - Min.		89.4%	91.4%	88.5%	89.6%	90.7%	92.7%
CO OUT, lb/hr - Max.		2.1	2.8	1.6	1.6	1.7	2.2
CO OUT, ppmvd @ 15% O_2		5.8	12.1	2.9	3.6	5.1	10.2
CO PRESSURE DROP, "WG - Max.		2.1	1.5	3.0	2.5	2.1	1.4

II. SYSTEM DESCRIPTIONS

A. Process Description

The gas turbine exhaust passes through the carbon monoxide catalytic oxidation system where the carbon monoxide is oxidized. The oxidation reaction between oxygen and carbon monoxide, which is enhanced by the catalyst, occurs at 500°F and above to form carbon dioxide.

B. Equipment Description

The CO converter unit assembly is shown on the 6196-100 Drawing. The special stainless steel foil is pattern corrugated and folded back and forth upon itself to make a honeycomb core. The core is encased in a stainless steel enclosure measuring approximately 4 square feet. This core and enclosure is called a "module."

These modules are fitted into an internal support frame(s) made of stainless steel. Expansion seals on the outside of the internal support frame assures that the exhaust passes through the catalyst. The expansion seals also accommodate thermal expansion. The above mentioned components are installed in an external support structure (by others) which serves as a duct spool piece.

This catalyst structure is constructed of carbon steel with a stainless steel liner over the insulation, and has a manway on one side wall. The manway is for installation and removal of catalyst modules.

The converter duct spool is also equipped with a series of gas ports for access to measure total and static pressures for developing a velocity profile. These ports can also be used to take samples from front and back of the converter, or to mount any customer supplied instruments.

Test catalyst cores or "buttons" (cylinders about 3 inches dia.) are located in various catalyst modules. The test catalyst buttons are mounted for easy replacement from time to time for lab testing.

The largest and heaviest component that requires manual lifting is the modules, which are approximate 25.7" wide x 22.1" tall x 4.2" deep and weigh approx 34 lbs

C. Safety Considerations

Normal safety precautions for working near large fired boilers and associated equipment should be followed according to good operating practice and the manufacturer's instructions.

Care must be taken to avoid hot gases that may escape while access gas ports are uncapped.

III. OPERATING AND MAINTENANCE

The principal of operation for the CO catalytic converter is a chemical reaction dependent only on temperature and requires no control instruments

The catalyst must be operated in accordance with the following conditions and limitations; failure to operate the catalyst only in accordance with these conditions and limitations voids the warranty.

1. The catalyst is only exposed to the stated exhaust flow conditions which are free of contaminants and particulates outside those listed in the performance data in the contract

2. The catalyst will be operated in accordance with the conditions as specified by the BUYER in the performance data in the contract.

3. The maximum temperature shall not be permitted to exceed the following;

1200 F(649 C)*

* This temperature limit is specified without consideration to critical operating temperatures which exist as a result of structural steel characteristics

4. For purposes of illustration, and not by way of limitation, SELLER calls to BUYER'S attention the following examples of specifications that must be met.

(a) The following contaminants are known catalyst deactivators and contribute to shortened catalyst life: heavy and base metals such as lead, mercury, arsenic, antimony, sodium, potassium, lithium, zinc, copper, tin, iron, nickel and chrome; sulfur; silicon, phosphorous and fluorine, chlorine, iodine and ash . Hence, the contents of these contaminants in the catalyst must not singularly or collectively accumulate to such a level that exceeds 350mg/m^3 or 10 mg/ ft^3 of catalyst as determined by ICP-OES (Inductively Coupled Plasma - Optical Emissions Spectroscopy).

5. No alternative fuels are to be used other than those specified in the performance contract.

6. Thermal shocking should be avoided requiring a gradual heat-up and cool-down cycle.

7. Due to the simplicity of design the only maintenance required would be a periodic inspection of the upstream face of the catalyst. Check for debris which would cause obstructions to gas flow or which would resist thermal expansions.

8. Should other specific maintenance be required it would be recommended by Engelhard Corp. through the test button program. Attached are two

typical maintenance procedures, air and water washing, that could be recommended by Engelhard Corp.

IIII Catalyst Storage

Storage of catalyst for any length of time should take place where it is clean and dry. If catalyst modules are to be stored outside the housing, the location should be in a low traffic area to avoid accidental damage. Crates or platforms holding modules should always be elevated at least 4 inches from the floor to avoid puddles and allow air circulation.

The following is a recommended storage procedure:

Catalyst modules should be braced and sealed in a wooden crate. Bracing should be secure enough to prevent any loads from resting on the surface of the catalyst foil or excessive loads on the lifting and mounting lugs. A water vapor absorbent can be obtained from Engelhard Co. which can be stored in a crate to assure a dry environment. The crate should then be braced and stored where it is elevated at least 4 inches off the floor and tarped for water run-off. Proper pitch bracing should be provided under the tarp to keep water from pooling. Ambient temperatures are not a concern.

V MSDS

The MSDS is attached.

VI Drawings and Attachments

The following drawings are attached.

6196-100 Rev A	Notes - Reactions - Abbreviations
6196-101 Rev A	'CO' Converter Unit Assembly
6196-104 Rev A	Array Assembly Field Installation
6196-121 Rev A	Duct Requirements

Attachment #1	Washing Instructions
Attachment #2	Test Catalyst Module
Attachment #3	Test Core Replacement Record

Attachment #1

CAMET CO OXIDATION Catalyst Air Cleaning Instructions

A). Use oil-free, compressed air supply at 60 psi maximum.

B). Use an air nozzle with 1/4 inch diameter maximum opening.
Keep nozzle at least 6 inches from the face of the catalyst.

C). Clean up the blown out debris from duct prior to start-up.

1). The airflow direction should be opposite to the exhaust gas flow direction.
Do not learn against the catalyst face.
Do not mar the catalyst face with the hose nozzle.

2). Blow out each 2 ft x 2 ft module using a side to side motion, and an up and down motion.
Blow out each module for 1 to 1 1/2 minutes or until clean.

3). Any excessive amount of debris on the face of the catalyst may be removed by vacuuming.

Attachment#1

CAMET CO Oxidation Catalyst Water Washing Instructions

A). Use deionized or equivalent quality water supply.

B). Use low pressure, high volume water flow. Use a rate similar to that for filling a pail.

C). Recommend 2 inch to 3-inch hose coupling with canvas-type hose.

D). Use pumps and/or drains to move washing water from the duct floor on both sides of the catalyst layer.

E). Use plastic sheeting to protect adjacent tube bundles, ducting and Nox control SCR catalyst (if present) from splashing water.

F). Make sure water has an exit route or collection point.

1). Place hose-end against catalyst downstream face.
Water flow direction should be opposite to the exhaust gas flow direction.
Do not lean against the catalyst face.
Do not mar the catalyst face with the hose nozzle.

2). Wash each 2 ft x 2 ft module using a side to side motion, and an up and down motion. Wash each module for 1 to 1 1/2 minutes.

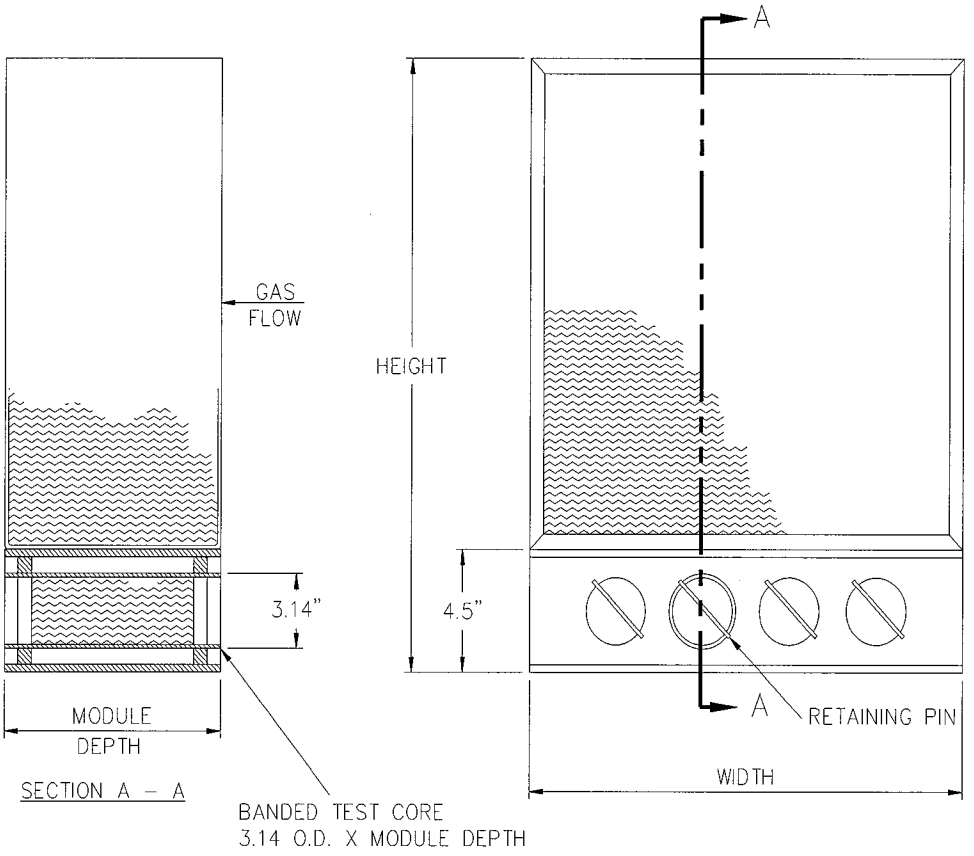
3). For first wash, to keep track of washing progress, wash catalyst arrangement from bottom to top.
(Dry modules = not washed modules).

4.) Let catalyst soak for one hour.

5). Repeat washing. Pattern should follow top to bottom.

6). The catalyst will hold up an equivalent volume of water after washing. This water may be blown out using 60 psi maximum compressed air with a 1/4 inch nozzle, kept at least 6 inches from the catalyst face.
Blow out the water from the downstream side of the catalyst.
The water must be blown out if there is an SCR catalyst downstream of the CO oxidation catalyst.
The catalyst does not need to be dried before start-up.

Attachment #2



TEST CATALYST MODULE

ATTACHMENT 2.

ATTACHMENT 5.

TEST CORE REPLACEMENT RECORD

ENGELHARD PES
12000 WINROCK ROAD
HIRAM, OHIO 44234
PH. 330-569-3245
FAX 330-569-3276

ATTN: LAB

FORM TO ACCOMPANY TEST CORES RETURNED TO ENGELHARD PES

DATE: _____ TEST CORE REPLACEMENT DATE: _____

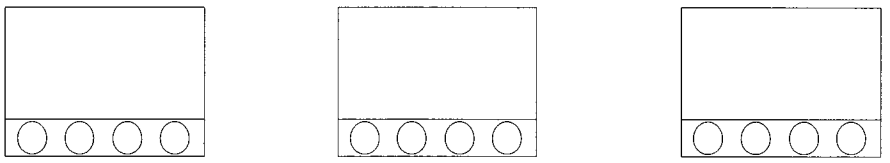
PROJECT: _____ NUMBER OF CORES REPLACED: _____

UNIT NO.: _____

PLEASE INDICATE IN FIGURE(S) BELOW THE SPECIFIC CORE(S) THAT WERE CHANGED. RECORD THE SERIAL NUMBERS OF THE CORE(S) THAT WERE REMOVED AND THE REPLACEMENT CORE(S).

IN THE FOLLOWING NOTATION, PLEASE CIRCLE "UPSTREAM" OR "DOWNSTREAM" TO INDICATE THE VIEWING POSITION.

FOUR CORE TEST MODULE
LOOKING UPSTREAM/DOWNSTREM



CUSTOMER INFORMATION

NAME: _____

ADDRESS: _____

_____

PHONE: _____

CONTACT INDIVIDUAL: _____

ATTACHMENT I

SUPPORTING EMISSIONS CALCULATIONS

By: CCS | Checked By: PEW
Date: 01/17/2007 | Date: 01/17/2007

Proposed Facility PTE

Criteria Pollutants	Pounds/ Hour	Tons/ Year
CO	23.18	157.18
NO_X	50.37	247.60
PM	3.40	26.23
PM_{10}	3.40	26.23
SO_2	1.03	5.36
VOC	4.28	18.59
HAPs		
Benzene	0.0054	0.0007
Toluene	0.0020	0.0003
Xylenes	0.0014	0.0002
Formaldehyde	0.0406	0.3001
Acetaldehyde	0.0002	0.0001
Acrolein	0.0001	0.0001
Naphthalene	0.0009	0.0001

Facility Emissions Limits from Title V Permit*

Criteria Pollutants	Pounds/ Hour	Tons/ Year
CO	19.95	156.74
NO_X	31.10	245.00
PM	3.00	26.17
PM_{10}	3.00	26.17
SO_2	0.68	5.31
VOC	3.30	18.46
HAPs		
Formaldehyde	0.04	0.30

*R30-09900080-2003

By: CCS
Date: 01/17/2007

Checked By: PEW
Date: 01/17/2007

Cummins Power Generation 60 Hz Diesel Generator Set 750DQCB

Specifications

Manufacturer:	Cummins	
Engine Model Number:	QSK23-G3 NR1	
Engine Type:	4 Cycle 6 Cylinder In Line	
Aspiration:	Turbocharged and Aftercooled	
Displacement:	23.15	L
Fuel Consumption (Full Standby):	51.3	gallons/hour
Assumed Heating Value of Diesel Fuel:	136,600	Btu/gallon
Maximum Horsepower:	1,135	HP
Maximum Fuel Input:	7.01	MMBtu/hour
Power Rating:	750	kW

Hours Per Year[4] = 270

Criteria Pollutant	Emission[1] Factor (grams/HP-Hour)	Hourly Emissions (grams/hour)	Hourly Emissions (lbs/hour)	Annual Emissions (tons/year)
HC (VOC)	0.39	442.65	0.98	0.13
NO_X	7.7	8739.50	**19.27**	2.60
CO	1.29	1464.15	3.23	0.44
PM	0.16	181.60	0.4	0.06
SO_2	0.14	158.90	0.35	0.05

Criteria Pollutant	Emission[2] Factor (lb/MMBtu)	Hourly Emissions (lbs/hour)	Annual Emissions (tons/year)
PM_{10}	0.0573	0.4015	0.06

Checking 144 lb/day limit using highest Criteria Pollutant value = **462.48** lb/day

Hazardous Air Pollutant (HAPs)	Emission[3] Factor (lb/MMBtu)	Hourly Emissions (lbs/hour)	Annual Emissions (tons/year)
Benzene	7.76E-04	0.0054	0.0007
Toluene	2.81E-04	0.002	0.0003
Xylenes	1.93E-04	0.0014	0.0002
Formaldehyde	7.89E-05	0.0006	0.0001
Acetaldehyde	2.52E-05	0.0002	0.0001
Acrolein	7.88E-06	0.0001	0.0001
Naphthalene	1.30E-04	0.0009	0.0001
Total HAPS		***0.0106***	***0.0016***

Notes:

1. Highest manufacturer supplied emission factor reguardless of standby condition, Cummins Power Generation Emission Data Sheet eds-1038d.
2 AP-42, Table 3.4-2.
3. AP-42, Tables 3.4-3 & 3.4-4.
4. Client supplied, based on: 10 days (24 hrs/ day) operation; 0.5 hrs test/ week; 2.0 hrs test/ 6 months.

R13-2383
Big Sandy Peaker Plant, L.L.C.
Kenova

Pratt & Whitney FT8 Data

The following information is supplied from Pratt & Whitney. P/W data is based on the Lower Heating Value (LHV) of natural gas of 931.6 Btu/scf. Data is per FT8 Twin Pac.

	92 F 40% rel. hum. 100% Load	59 F 60% rel. hum. 100% Load	80 F 60% rel. hum. 100% Load	95 F 40% rel. hum. 100% Load				
Gross Output (MW)	50.30	56.00	51.30	49.70				
Gross Heat Rate (Btu/kWh)	9073	9183	9371	9463				
Heat Input (LHV)	547,101,900	514,248,000	480,732,300	470,311,100		LHV =	931.6 Btu/scf	*provided by P/W
Heat Input (HHV)	599,016,679	563,045,255	526,349,234	514,939,161		HHV =	1020 Btu/scf	
N/G consumed (scf/hr)	587,271	552,005	516,029	504,842				
Max NOx Rate (lb/hr)	62.20	58.40	54.80	53.50				
Max CO Rate (lb/hr)	39.90	35.60	33.30	32.60				
Max Voc Rate (lb/hr)	4.70	4.40	4.10	4.00				
MW%	100.00	92.87	85.07	82.42				
BTU%	100.00	93.99	87.87	85.96				
NOx%	100.00	93.89	88.10	86.01				
NOx delta @ Btu		-0.10	0.23	0.05	%			
CO%	100.00	89.22	83.46	81.70				
CO delta @ Btu		-4.77	-4.41	-4.28				
VOC%	100.00	93.62	87.23	85.11				
VOC delta @ Btu		-0.38	-0.63	-0.86				
NOx lb/scf	1.0591E-04	1.0580E-04	1.0620E-04	1.0597E-04				
NG Consumed (scf/yr)	4,626,413,414	4,631,550,060	4,614,124,883	4,623,789,421	*based on max NOx limit of 245 TPY			
Max NOx Rate (TPY)	244.35	244.08	245.00	244.49				
Max CO Rate (TPY)	156.74	148.79	148.88	148.98				
Max VOC Rate (TPY)	18.46	18.39	18.33	18.28				

Emissions Summary

Max Annual NOx (TPY) =	245		
Max Annual N/G =	4,614,124,883	scf	all turbines

	Hourly Emissions (lbs)			Annual Emissions (tons)	
Pollutant	**per turbine**	**per Twin Pac**	**facility-wide**	**facility-wide**	
NOx	31.10	62.2	373.20	245.00	
CO	19.95	39.90	239.40	156.74	
PM	3.00	6.00	36.00	26.17	*from excel spreadsheet
VOC	3.30	6.60	39.60	18.46	
SO2	0.68	1.35	8.10	5.31	
Form.	0.04	0.08	0.46	0.30	