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**COMMONWEALTH of VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL QUALITY**  
**PIEDMONT REGIONAL OFFICE**

Douglas W. Domenech  
Secretary of Natural Resources

4949A Cox Road, Glen Allen, Virginia 23060  
(804) 527-5020 Fax (804) 527-5106  
www.deq.virginia.gov

David K. Paylor  
Director

Michael P. Murphy  
Regional Director

August 27, 2012

Mr. T. Edward McDaniel  
Vice President Projects  
Gateway Cogeneration 1, LLC  
1717 Main St., Ste. 5850  
Dallas, TX 75201

Location: Prince George County  
Registration No.: 52375

Dear Mr. McDaniel:

Attached is a permit to construct and operate a combined-cycle combustion turbine facility in accordance with the provisions of the Virginia State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution.

This permit contains legally enforceable conditions. Failure to comply may result in a Notice of Violation and/or civil charges. Please read all permit conditions carefully.

In the course of evaluating the application and arriving at a final decision to approve the project, the Department of Environmental Quality (DEQ) deemed the application complete on January 11, 2012 and solicited written public comments by placing a newspaper advertisement in the Petersburg Progress-Index on July 8, 2012. A public hearing was held on August 8, 2012. The required comment period, provided by 9 VAC 5-80-1170 D expired on August 23, 2012.

This permit approval to construct and operate shall not relieve Gateway Cogeneration 1, LLC of the responsibility to comply with all other local, state, and federal permit regulations. Please note that your emergency fire water pump (FP01) appears to be an affected facility under 40 CFR 60, New Source Performance Standard (NSPS), Subpart IIII and therefore subject to owner/operator requirements of the NSPS; and to 40 CFR 63, Maximum Achievable Control Technology, (MACT), Subpart ZZZZ, and therefore subject to owner/operator requirements of the MACT. In summary, the unit could be required to comply with certain federal emission standards and operating limitations over their useful life. The DEQ advises you to review the attached NSPS and MACT to ensure compliance with applicable emission and operational limitations. As the owner/ operator you are also responsible for monitoring, notification, reporting and recordkeeping requirements of the NSPS and MACT. Notifications for these regulations and the results of performance tests required by 40 CFR 60, Subparts IIII and KKKK shall to be sent to:

Associate Director  
Office of Air Enforcement (3AP20)  
U.S. Environmental Protection Agency  
Region III  
1650 Arch Street  
Philadelphia, PA 19103-2029

The Board's Regulations as contained in Title 9 of the Virginia Administrative Code 5-170-200 provide that you may request a formal hearing from this case decision by filing a petition with the Board within 30 days after this case decision notice was mailed or delivered to you. 9 VAC 5-170-200 provides that you may request direct consideration of the decision by the Board if the Director of the DEQ made the decision. Please consult the relevant regulations for additional requirements for such requests.

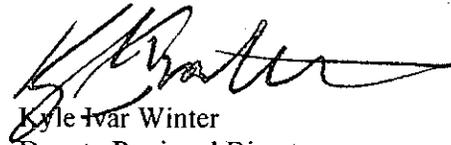
As provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date you actually received this permit or the date on which it was mailed to you, whichever occurred first, within which to initiate an appeal of this decision by filing a Notice of Appeal with:

David K. Paylor, Director  
Department of Environmental Quality  
P. O. Box 1105  
Richmond, VA 23218

If this permit was delivered to you by mail, three days are added to the thirty-day period in which to file an appeal. Please refer to Part Two A of the Rules of the Supreme Court of Virginia for information on the required content of the Notice of Appeal and for additional requirements governing appeals from decisions of administrative agencies.

If you have any questions concerning this permit, please contact the regional office at (804) 527-5020.

Sincerely,



Kyle Ivar Winter  
Deputy Regional Director

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Attachments: Permit  
NSPS, Subparts KKKK and IIII  
MACT Subpart ZZZZ  
Source Testing Report Format

cc: Director, OAPP (electronic file submission)  
Manager, Data Analysis (electronic file submission)  
Chief, Office of Air Enforcement and Compliance Assistance, U.S. EPA, Region III (electronic file submission)  
Inspector, Air Compliance (electronic file submission)



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## PREVENTION OF SIGNIFICANT DETERIORATION PERMIT STATIONARY SOURCE PERMIT TO CONSTRUCT AND OPERATE

**This permit includes designated equipment subject to  
New Source Performance Standards (NSPS).**

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia  
Regulations for the Control and Abatement of Air Pollution,

Gateway Cogeneration 1, LLC – Smart Water Project  
1717 Main St., Ste. 5850  
Dallas, TX 75201  
Registration No.: 52375

is authorized to construct and operate

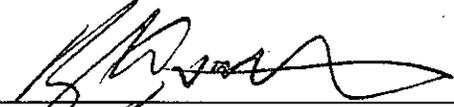
a combined-cycle combustion turbine facility

located at

Chudoba Parkway, east of 295, 1 mile from the interchange with  
Rte. 460, Prince George, Virginia

in accordance with the Conditions of this permit.

Approved on August 27, 2012.

  
Deputy Regional Director  
Department of Environmental Quality

Permit consists of 16 pages.  
Permit Conditions 1 to 49.

**INTRODUCTION**

This permit approval is based on the permit application dated January 11, 2012, including amendment information dated May 11, 2012 and July 5, 2012 and supplemental information dated May 4, 2012. Any changes in the permit application specifications or any existing facilities which alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action. In addition, this facility may be subject to additional applicable requirements not listed in this permit.

Words or terms used in this permit shall have meanings as provided in 9 VAC 5-10-20 of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution. The regulatory reference or authority for each condition is listed in parentheses () after each condition.

Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by the DEQ or the Board for information to include, as appropriate: process and production data; changes in control equipment; and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact.

The availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.2-3700 through 2.2-3714 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board) of the Code of Virginia, and 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.

**PROCESS REQUIREMENTS**

1. **Equipment List** - Equipment at this facility consists of the following:

<b>Equipment to be Constructed</b>			
<b>Ref. No.</b>	<b>Equipment Description</b>	<b>Rated Capacity</b>	<b>Federal Requirements</b>
CT01	Rolls Royce Trent 60 WLE Combustion Turbine and associated HRSG	64 MW (CT only) 593 MMBtu/hr natural gas 583 MMBtu/hr ULS diesel	NSPS Subpart KKKK
CT02	Rolls Royce Trent 60 WLE Combustion Turbine and associated HRSG	64 MW (CT only) 593 MMBtu/hr natural gas 583 MMBtu/hr ULS diesel	NSPS Subpart KKKK
FP01	Emergency Diesel Fire Pump	1.86 MMBtu/hr (250 Bhp)	NSPS Subpart IIII (non-delegated) MACT Subpart ZZZZ (non-delegated)
TR01	Mechanical draft cooling tower	55,000 gallons/minute	
EB01	Four electrical circuit breakers	60 lb SF <sub>6</sub> per breaker	

Equipment Exempt from Permitting				
Ref. No.	Equipment Description	Rated Capacity	Exemption Citation	Exemption Date
TK01	Vertical fixed roof storage tank for ULSD	115,000 gallons	9 VAC 5-80-1320 B 4	August 27, 2012

(9 VAC 80-1180 D 3 and 9 VAC 5-80-1705 B)

**PSD Process Requirements:**

2. **Emission Controls: Combustion turbines** – Particulate matter emissions from the combustion turbines (CT01, CT02) shall be controlled by the use of clean-burning fuels (natural gas and ultra low sulfur diesel) and good combustion practices.  
(9 VAC 5-80-1705 B and 9 VAC 5-50-280)
  
3. **Emission Controls: Combustion turbines** – Greenhouse gas emissions (including carbon dioxide, methane, and nitrous oxides) as CO<sub>2</sub>-equivalents from the combustion turbines (CT01, CT02) shall be controlled by the use of low carbon fuels and high efficiency design. The heat rate shall be no greater than 8,983 Btu/kW-hr (HHV, gross). Compliance shall be determined using the testing procedure in Condition 34.  
(9 VAC 5-80-1705 B and 9 VAC 5-50-280)
  
4. **Emission Controls: Fire pump** – Particulate matter emissions from the emergency fire pump (FP01) shall be controlled by the use of clean-burning fuel (ultra low sulfur diesel) and good combustion practices.  
(9 VAC 5-80-1705 B and 9 VAC 5-50-280)
  
5. **Emission Controls: Cooling tower** – Particulate matter emissions from the cooling tower (TR01) shall be controlled by the use of drift eliminators to a drift rate of 0.001 percent of the circulating water flow and a total dissolved solids content of the cooling water of no more than 1200 mg/l. The permittee shall keep a log of weekly testing for total dissolved solids content of the cooling water.  
(9 VAC 5-80-1705 B and 9 VAC 5-50-280)
  
6. **Emission Controls: Fire pump** – Greenhouse gas emissions (including carbon dioxide, methane, and nitrous oxides) as CO<sub>2</sub>-equivalents from the emergency fire pump (FP01) shall be controlled by the use of a fuel-efficient design.  
(9 VAC 5-80-1705 B and 9 VAC 5-50-280)
  
7. **Emission Controls: Electrical breakers** – Greenhouse gas emissions (including SF<sub>6</sub>) from the electrical circuit breakers (EB01) shall be controlled by an enclosed-pressure circuit breaker, with a maximum annual leakage rate of 1.0 percent, and a leak detection system (gas density gauges). The leak detection system shall be in operation when the circuit breakers are in use.  
(9 VAC 5-80-1705 B and 9 VAC 5-50-280)

**Minor NSR Process Requirements:**

8. **Emission Controls: Combustion turbines** – Nitrogen oxide emissions from the combustion turbines (CT01, CT02) shall be controlled by the use of water injection and selective catalytic reduction (SCR). The SCR shall be provided with adequate access for inspection and shall be in operation when the combustion turbines (CT01, CT02) are operating.  
(9 VAC 5-80-1180 and 9 VAC 5-50-260)
9. **Monitoring: Combustion turbines** - A continuous monitoring system shall be installed to monitor and record the fuel consumption and the ratio of water (injected) to fuel fired in the turbine. This system shall be accurate to within  $\pm 5.0$  percent. It shall be maintained and calibrated in accordance with the manufacturer's specifications.  
(9 VAC 5-80-1180 and 9 VAC 5-50-410)
10. **Monitoring Devices** - The SCR shall be equipped with devices to continuously measure and record the ammonia feed rate and catalyst bed inlet gas temperature. Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the SCR system is operating.  
(9 VAC 5-80-1180 D and 9 VAC 5-50-260)
11. **Monitoring Device Observation: SCR** – To ensure good performance, the devices used to continuously measure the feed rate, gas stream flow rate, and SCR catalyst bed inlet gas temperature shall be observed by the permittee with a frequency sufficient to ensure good performance of the SCR system but not less than once per day of operation. The permittee shall continuously record measurements from the control monitoring devices.  
(9 VAC 5-80-1180 D and 9 VAC 5-50-50 H)
12. **Emission Controls: Combustion turbines** – Carbon monoxide and volatile organic compound emissions from the combustion turbines (CT01, CT02) shall be controlled by the use of catalytic oxidation (CAT). The CAT shall be provided with adequate access for inspection and shall be in operation when the combustion turbines (CT01, CT02) are operating.  
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

**OPERATING LIMITATIONS**

13. **Fuel: Combustion turbines** - The approved fuels for the combustion turbines (CT01, CT02) are pipeline natural gas with ultra low sulfur diesel fuel (ULSD) as backup. The ULSD fuel shall only be used during periods when natural gas is unavailable. A change in the fuel may require a permit to modify and operate.  
(9 VAC 5-80-1180, 9 VAC 5-80-1705 B, 9 VAC 5-50-260 and 9 VAC 5-50-280)
14. **Fuel Throughput: Combustion turbines** - The combustion turbines (CT01, CT02) shall consume no more than  $10.1 \times 10^9$  cubic feet of natural gas and  $4.2 \times 10^6$  gallons of ULSD per

year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

(9 VAC 5-80-1180, 9 VAC 5-80-1705 B, 9 VAC 5-50-260 and 9 VAC 5-50-280)

15. **Fuel: Fire pump** - The approved fuel for the emergency fire pump (FP01) is ULSD. A change in the fuel may require a permit to modify and operate.  
(9 VAC 5-80-1705 B)

16. **Operating Hours: Fire pump** - The emergency fire pump (FP01) shall not operate more than 200 hours per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.  
(9 VAC 5-80-1705 B and 9 VAC 5-50-280)

17. **Monitoring Devices – Fire pump** – The permittee shall install a non-resettable hour meter on the emergency fire pump (FP01) prior to the startup of the unit. The hour meter shall be provided with adequate access for inspection.  
(9 VAC 5-80-1180D and 9 VAC 5-80-1705 B)

18. **Fuel** - The ULSD oil and natural gas shall meet the specifications below:

DISTILLATE OIL (ULSD) which meets the ASTM D396 specification for numbers 1 or 2 fuel oil:

Maximum sulfur content per shipment: 0.0015%

NATURAL GAS:

Minimum heat content: 950 Btu/cf HHV as determined by ASTM D1826, D2382, or a DEQ-approved equivalent method.

(9 VAC 5-80-1180, 9 VAC 5-80-1705 B, 9 VAC 5-50-410, 9 VAC 5-50-260, and 9 VAC 5-50-280)

19. **Fuel Certification** - The permittee shall obtain a certification from the fuel supplier with each shipment of ULSD oil. Each fuel supplier certification shall include the following:
- The name of the fuel supplier;
  - The date on which the ULSD oil was received;
  - The quantity of ULSD oil delivered in the shipment;

- d. A statement that the ULSD oil complies with the American Society for Testing and Materials specifications (ASTM D396) for numbers 1 or 2 fuel oil;
- e. The sulfur content of the ULSD oil;

Fuel sampling and analysis, independent of that used for certification, as may be periodically required or conducted by DEQ may be used to determine compliance with the fuel specifications stipulated in Condition 17. Samples taken as required by this permit shall be analyzed in accordance with 1 VAC 30-45, Certification for Noncommercial Environmental Laboratories, or 1 VAC 30-46, Accreditation for Commercial Environmental Laboratories. Exceedance of these specifications may be considered credible evidence of the exceedance of emission limits.

(9 VAC 5-80-1180 and 9 VAC 5-50-410)

20. **Maintenance and Operation: Fire pump** – The permittee must maintain and operate the emergency fire pump (FP01) according to the manufacturer’s written instruction, or procedures developed by the permittee that are approved by the manufacturer, over the entire life of the engine. In addition, the permittee may only change those settings that are approved by the manufacturer.

(9 VAC 5-80-1180)

21. **Requirements by Reference** - Except where this permit is more restrictive than the applicable requirement, the NSPS equipment as described in Condition 1 shall be operated in compliance with the requirements of 40 CFR 60, Subpart KKKK.

(9 VAC 5-80-1180, 9 VAC 5-50-400 and 9 VAC 5-50-410)

### **EMISSION LIMITS**

22. **Requirements during Combustion Turbine (CT01, CT02) Startup and Shutdown**

- a. Start-up is defined as the period beginning with initial firing of fuel and ending at 50% load and the emission control systems reach full operations. Shutdown is defined as the period beginning with the load decreasing from 50% and ending when the fuel flow has been discontinued and combustion has ceased. Emissions occurring during start-up and shutdown shall be monitored, recorded, reported and included in the annual emission rates, but not the 3-hour block average. Annual emissions are calculated monthly as the sum of each consecutive 12-month period.
- b. The permittee must operate the CEMS during startups and shutdowns.
- c. The permittee must record the time, date, and duration of each startup and shutdown event. The records must include calculations of NO<sub>x</sub> and CO emissions during each event based on the CEMS data. These records must be kept for five years following the date of such event.

- d. During startup, the combustion turbine SCR system, including ammonia injection, shall be operated in a manner to minimize emissions, as technologically feasible, and not later than when the load reaches 50% of unit output.  
 (9 VAC 5-80-1180 and 9 VAC 5-80-1705)

**23. Short-Term Emission Limits: Combustion Turbines** -Emissions from the operation of each of the combustion turbines (CT01, CT02) shall not exceed the limits specified below:

Pollutant	Short term emission limits
PM <sub>10</sub> (including condensable)	5.0 lb/hr when combusting natural gas 15.0 lb/hr when combusting ULSD
PM <sub>2.5</sub> (including condensable)	5.0 lb/hr when combusting natural gas 15.0 lb/hr when combusting ULSD
Sulfur dioxide	0.3 ppmvd @ 15% O <sub>2</sub>
Nitrogen Oxides (as NO <sub>2</sub> )	2.0 ppmvd @ 15% O <sub>2</sub> when combusting natural gas 5.0 ppmvd @ 15% O <sub>2</sub> when combusting ULSD
Carbon monoxide	4.0 ppmvd @ 15% O <sub>2</sub>
Volatile organic compounds	2.0 ppmvd @ 15% O <sub>2</sub>

Where:

ppmvd = parts per million by volume on a dry gas basis, corrected to 15 percent O<sub>2</sub>.

Short-term emission limits represent averages for a three-hour sampling period.

Unless otherwise specified, limits apply at all times except during startup, shutdown, and malfunction. Periods considered startup and shutdown are defined in Condition 22 of this permit.

(9 VAC 5-80-1180, 9 VAC 5-50-280, 9 VAC 5-50-410, 9 VAC 5-80-1705, 9 VAC 5-80-1715)

- 24. Emission Limits: Combustion Turbines** – CO<sub>2</sub> emissions from the combustion turbines (CT01, CT02) shall not exceed 1,050 lbs/MWh (gross output) on a 12-operating month annual average basis. Compliance may be determined by the method in 40 CFR Part 75, Appendix G.  
 (9 VAC 5-80-1180 and 9 VAC 5-50-280)

**25. Process Emission Limits** - Emissions from the operation of each of the combustion turbines (CT01, CT02) shall not exceed the limits specified below:

PM <sub>10</sub> (including condensable)	24.4 tons/yr	(on a 12-month, rolling average)
PM <sub>2.5</sub> (including condensable)	24.4 tons/yr	(on a 12-month, rolling average)
Sulfur Dioxide	3.9 tons/yr	(on a 12-month, rolling average)
Nitrogen Oxides (as NO <sub>2</sub> )	19.5 tons/yr	(on a 12-month, rolling average)

Carbon Monoxide	24.9 tons/yr	(on a 12-month, rolling average)
Volatile Organic Compounds	11.7 tons/yr	(on a 12-month, rolling average)
CO <sub>2</sub> -equivalents	295,961.0 tons/yr	(on a 12-month, rolling average)

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 2, 3, 13, 14, 18, and 28.

(9 VAC 5-80-1180, 9 VAC 5-50-260, and 9 VAC 5-50-280)

26. **Process Emission Limits** - Emissions from the operation of the firewater pump (FP01) shall not exceed the limits specified below:

PM <sub>10</sub>	0.15 g/hp-hr
PM <sub>2.5</sub>	0.15 g/hp-hr
CO <sub>2</sub> -equivalents	30.5 tons/yr (on a 12-month rolling average)

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 4, 6, 16, 17, 18, and 20.

(9 VAC 5-80-1180 and 9 VAC 5-50-280)

27. **Process Emission Limits** - Emissions from the operation of the electrical circuit breakers (EB01) shall not exceed the limits specified below:

CO <sub>2</sub> -equivalents	28.7 tons/yr (on a 12-month rolling average)
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These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 1 and 7.

(9 VAC 5-80-1180, 9 VAC 5-50-260, and 9 VAC 5-50-280)

28. **Visible Emission Limit** - Visible emissions from the combustion turbines (CT01, CT02) shall not exceed 10 percent opacity, except during one six-minute period in any one hour in which visible emissions shall not exceed 20 percent opacity as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown (as defined in Condition 22), and malfunction.

(9 VAC 5-80-1180, 9 VAC 5-50-260, and 9 VAC 5-50-280)

**CEMS**

29. **CEMS** - Continuous Emission Monitoring Systems (CEMS) shall be installed to measure and record the emissions of NO<sub>x</sub> (measured as NO<sub>2</sub>), CO<sub>2</sub> and CO, in ppmvd corrected to 15 percent O<sub>2</sub>, from each combined cycle combustion turbine (CT01, CT02). CEMS for NO<sub>x</sub> shall meet the design specifications of 40 CFR Part 75, whereas CEMS for CO shall be installed, evaluated, and operated according to the "Monitoring Requirements" in 40 CFR 60.13. The CEMS shall also measure and record the oxygen content of the flue gas at each location where NO<sub>x</sub> and CO emissions are monitored, and measure heat input and power output. Each CEMS shall be installed, calibrated, maintained, audited and operated in accordance with the requirements of 40 CFR 75. For the purposes of this permit, data shall be reduced to 3-hour block averages. The relative accuracy test audit of the NO<sub>x</sub> CEMS shall be performed on a lb/MMBtu basis.  
(9 VAC 5-50-40, 9 VAC 5-50-260 and 9 VAC 5-80-410)
30. **CEMS Performance Evaluations** - Performance evaluations of the NO<sub>x</sub> CEMS shall be conducted in accordance with 40 CFR Part 75, Appendix A, and shall take place during the performance tests under 9 VAC 5-50-30 or within 30 days thereafter. Two copies of the performance evaluation report shall be submitted to the Piedmont Regional Office within 45 days of the evaluation. The CEMS shall be installed and operational prior to conducting initial performance tests. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation and calibration of the device. A 30-day notification, prior to the demonstration of the CEMS' performance, and subsequent notifications shall be submitted to the Piedmont Regional Office.  
(9 VAC 5-50-40)
31. **CEMS Quality Control Program** - A CEMS quality control program, which is equivalent to the requirements of 40 CFR 60.13, and 40 CFR 60, Appendix F shall be implemented for all continuous monitoring systems.  
(9 VAC 5-50-40)
32. **Reports for Continuous Monitoring Systems** - The permittee shall furnish written reports to the Piedmont Regional Office of excess emissions from any process monitored by a continuous monitoring system (CEMS) on a quarterly basis, postmarked no later than the 30th day following the end of each calendar quarter. These reports shall include, but are not limited to, the following information:
- a. The magnitude of excess emissions, any conversion factors used in the calculation of excess emissions, and the date and time of commencement and completion of each period of excess emissions;
  - b. Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the process, the nature and cause of the malfunction (if known), the corrective action taken or preventative measures adopted;

- c. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments; and
- d. When no excess emissions have occurred or the continuous monitoring systems have not been inoperative, repaired or adjusted, such information shall be stated in that report.  
(9 VAC 5-50-50)

### **INITIAL COMPLIANCE DETERMINATION**

33. **Stack Test** - Initial performance tests shall be conducted for PM<sub>10</sub> (including condensable PM<sub>10</sub>) from each combustion turbine to determine compliance with the emission limits contained in Condition 23. The tests shall be performed, reported and demonstrate compliance within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of the permitted facility. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30 and the test methods and procedures contained in each applicable section or subpart listed in 9 VAC 5-50-410.

Tests shall initially be conducted while combustion turbines are burning natural gas. Within 60 days after firing distillate fuel oil at the facility, additional tests for PM<sub>10</sub> and PM<sub>2.5</sub> shall be conducted for distillate fuel oil firing.

The details of the tests are to be arranged with the Piedmont Regional Office. The permittee shall submit a test protocol at least 30 days prior to testing. One copy of the test results shall be submitted to the Piedmont Regional Office within 45 days of test completion (and in accordance with submittal requirements in the preceding paragraph) and shall conform to the test report format enclosed with this permit.

(9 VAC 5-50-30 and 9 VAC 5-50-410)

34. **Testing** - Initial compliance testing, using ASME Performance Test Code on Overall Plant Performance (ASME PTC 46-1996), shall be conducted for the heat rate limit of each of the combustion turbine (CT01, CT02) power blocks to show compliance with the heat rate limit contained in Condition 3. The testing shall be performed, reported and demonstrate compliance within 90 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of the permitted facility. Testing shall be conducted when combusting natural gas. The details of the tests are to be arranged with the Piedmont Regional Office. The permittee shall submit a test protocol at least 30 days prior to testing. One copy of the test results shall be submitted to the Piedmont Regional Office within 45 days of test completion (and in accordance with submittal requirements in the preceding paragraph) and shall conform to the test report format enclosed with this permit.

(9 VAC 5-50-30 and 9 VAC 5-80-1675)

35. **Visible Emissions Evaluation** - Concurrently with the initial performance tests for particulate matter while burning ULSD oil, Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 9, shall be conducted by the permittee on the stack servicing each combustion turbine. Each test shall consist of 30 sets of 24 consecutive observations (at 15 second intervals) to yield a six minute average. At least one VEE shall be conducted for each of the operating scenarios and loads for which emissions tests are required for the stack tests above. The details of the tests are to be approved by the Piedmont Regional Office. The permittee shall submit a test protocol at least 30 days prior to testing. The evaluation shall be performed, reported and demonstrate compliance within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of the permitted facility.

Should conditions prevent concurrent opacity observations, the Piedmont Regional Office shall be notified in writing, within seven days, and visible emissions testing shall be rescheduled within 30 days. Rescheduled testing shall be conducted under the same conditions (as possible) as the initial performance tests. One copy of the test results shall be submitted to the Piedmont Regional Office within 45 days of test completion (and in accordance with submittal requirements in the preceding paragraph) and shall conform to the test report format enclosed with this permit.

(9 VAC 5-50-30, 9 VAC 5-80-1985 E, and 9 VAC 5-50-410)

## RECORDS

36. **On Site Records** - The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Piedmont Regional Office. These records shall include, but are not limited to:
- a. Annual hours of operation of the emergency fire pump (FP01), calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
  - b. Annual throughput of natural gas and ULSD to the combustion turbines (CT01, CT02), calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
  - c. Time, date and duration of each startup, shutdown, and malfunction period for each combustion turbine (CT01, CT02)
  - d. All fuel supplier certifications.

- e. Continuous monitoring system emissions data, calibrations and calibration checks, percent operating time, and excess emissions.
- f. Operation and control device monitoring records for each SCR system and oxidation catalyst as required in Conditions 8 and 9.
- g. Weekly log of dissolved solids content of cooling water
- h. Scheduled and unscheduled maintenance, and operator training.
- i. Results of all stack tests, visible emission evaluations, and performance evaluations.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-80-1180 and 9 VAC 5-50-50)

37. **Emissions Testing** - The combined-cycle combustion turbine facility shall be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. This includes constructing the facility/equipment such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and providing a stack or duct that is free from cyclonic flow. Sampling ports shall be provided when requested at the appropriate locations and safe sampling platforms and access shall be provided.

(9 VAC 5-50-30 F and 9 VAC 5-80-1180)

### **NOTIFICATIONS**

38. **Initial Notifications** - The permittee shall furnish written notification to the Piedmont Regional Office of:

- a. The actual date on which construction of the combustion turbines (CT01, CT02) commenced within 30 days after such date.
- b. The anticipated start-up date of the combustion turbines (CT01, CT02) postmarked not more than 60 days nor less than 30 days prior to such date.
- c. The actual start-up date of the combustion turbines (CT01, CT02) within 15 days after such date.
- d. The anticipated date of continuous monitoring system performance evaluations postmarked not less than 30 days prior to such date.
- e. The anticipated date of performance tests of the combustion turbines (CT01, CT02) postmarked at least 30 days prior to such date.

Copies of the written notification referenced in items a through e above are to be sent to:

Associate Director  
Office of Air Enforcement and Compliance Assistance (3AP20)  
U.S. Environmental Protection Agency  
Region III  
1650 Arch Street  
Philadelphia, PA 19103-2029  
(9 VAC 5-50-50 and 9 VAC 5-80-1180)

### **GENERAL CONDITIONS**

**39. Permit Invalidation** – This permit to construct the combined-cycle combustion turbine facility shall become invalid, unless an extension is granted by the DEQ, if:

- a. A program of continuous construction is not commenced within 18 months from the date of this permit; or
- b. A program of construction is discontinued for a period of 18 months or more, or is not completed within a reasonable time, except for a DEQ approved period between phases of a phased construction project.

(9 VAC 5-80-1210)

**40. Permit Suspension/Revocation** - This permit may be suspended or revoked if the permittee:

- a. Knowingly makes material misstatements in the permit application or any amendments to it;
- b. Fails to comply with the conditions of this permit;
- c. Fails to comply with any emission standards applicable to a permitted emissions unit, ;
- d. Causes emissions from the stationary source which result in violations of , or interfere with the attainment and maintenance of, any ambient air quality standard; or
- e. Fails to operate in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect at the time an application for this permit is submitted.

(9 VAC 5-80-1210 F)

**41. Right of Entry** - The permittee shall allow authorized local, state, and federal representatives, upon the presentation of credentials:

- a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;

- b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;
- c. To inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and
- d. To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.

(9 VAC 5-170-130 and 9 VAC 5-80-1180)

**42. Maintenance/Operating Procedures** – At all times, including periods of start-up, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions. The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment, monitoring devices, and process equipment which affect such emissions:

- a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
- b. Maintain an inventory of spare parts.
- c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
- d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures, prior to their first operation of such equipment. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.

(9 VAC 5-50-20 E and 9 VAC 5-80-1180 D)

**43. Record of Malfunctions** – The permittee shall maintain records of the occurrence and duration of any bypass, malfunction, shutdown or failure of the facility or its associated air pollution control equipment that results in excess emissions for more than one hour. Records shall include the date, time, duration, description (emission unit, pollutant affected, cause), corrective action, preventive measures taken and name of person generating the record.

(9VAC 5-20-180 J and 9 VAC 5-80-1180 D)

44. **Notification for Facility or Control Equipment Malfunction** - The permittee shall furnish notification to the Piedmont Regional Office of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour, by facsimile transmission, telephone or telegraph. Such notification shall be made as soon as practicable but no later than four daytime business hours after the malfunction is discovered. The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within two weeks of discovery of the malfunction. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify the Piedmont Regional Office. (9 VAC 5-20-180 C and 9 VAC 5-80-1180)
45. **Violation of Ambient Air Quality Standard** - The permittee shall, upon request of the DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated. (9 VAC 5-20-180 I and 9 VAC 5-80-1180)
46. **Change of Ownership** - In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify the Piedmont Regional Office of the change of ownership within 30 days of the transfer. (9 VAC 5-80-1240)
47. **Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies. (9 VAC 5-80-1180)

#### **STATE-ONLY ENFORCEABLE REQUIREMENTS**

The following terms and conditions are included in this permit to implement the requirements of 9 VAC 5-60-300 *et seq.* and are enforceable only by the Virginia Air Pollution Control Board. Neither their inclusion in this permit nor any resulting public comment period make these terms federally enforceable.

48. **Emission Limits** – Combined emissions from the combustion turbines (CT01, CT02) shall not exceed the limits specified below:

<u>Pollutant</u>	<u>CAS#</u>		
Formaldehyde	50-00-0	0.13 lb/hr	0.55 tons/yr

Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period.

(9 VAC 5-60-320, 9 VAC 5-80-1180 and 9 VAC 5-80-1625 G)

49. **On Site Records** – The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Piedmont Regional Office. These records shall include, but are not limited to the average hourly, monthly, and annual emissions (in pounds and tons) of each toxic compound listed in Condition 48. Hourly emissions shall be calculated monthly. Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. These records shall be available for inspection by DEQ and current for at least the most recent five years.  
(9 VAC 5-80-1180, 9 VAC 5-50-50, and 9 VAC 5-80-1625G)

## SOURCE TESTING REPORT FORMAT

### Report Cover

1. Plant name and location
2. Units tested at source (indicate Ref. No. used by source in permit or registration)
3. Test Dates.
4. Tester; name, address and report date

### Certification

1. Signed by team leader/certified observer (include certification date)
2. Signed by responsible company official
3. \*Signed by reviewer

### Copy of approved test protocol

### Summary

1. Reason for testing
2. Test dates
3. Identification of unit tested & the maximum rated capacity
4. \*For each emission unit, a table showing:
  - a. Operating rate
  - b. Test Methods
  - c. Pollutants tested
  - d. Test results for each run and the run average
  - e. Pollutant standard or limit
5. Summarized process and control equipment data for each run and the average, as required by the test protocol
6. A statement that test was conducted in accordance with the test protocol or identification & discussion of deviations, including the likely impact on results
7. Any other important information

### Source Operation

1. Description of process and control devices
2. Process and control equipment flow diagram
3. Sampling port location and dimensioned cross section Attached protocol includes: sketch of stack (elevation view) showing sampling port locations, upstream and downstream flow disturbances and their distances from ports; and a sketch of stack (plan view) showing sampling ports, ducts entering the stack and stack diameter or dimensions

### Test Results

1. Detailed test results for each run
2. \*Sample calculations
3. \*Description of collected samples, to include audits when applicable

### Appendix

1. \*Raw production data
2. \*Raw field data
3. \*Laboratory reports
4. \*Chain of custody records for lab samples
5. \*Calibration procedures and results
6. Project participants and titles
7. Observers' names (industry and agency)
8. Related correspondence
9. Standard procedures

\* Not applicable to visible emission evaluations