

Permit to Modify



R14-0013E

This permit is issued in accordance with the West Virginia Air Pollution Control Act (West Virginia Code §§22-5-1 et seq.) and 45 C.S.R. 13 – Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation. The permittee identified at the above-referenced facility is authorized to construct the stationary sources of air pollutants identified herein in accordance with all terms and conditions of this permit.

Issued to:

**Columbia Gas Transmission LLC
Lost River Compressor Station
031-00002**

William F. Durham
Director

Issued: Draft

This permit will supercede and replace Permit R14-0013D issued on May 31, 2013.

Facility Location: Mathias, Hardy County, West Virginia
Mailing Address: 1700 MacCorkle Avenue, SE, Charleston, WV 25314
Facility Description: Transmission Station for a natural gas pipeline system
NAICS Codes: 486210
UTM Coordinates: 685.5 km Easting • 4,305.1 km Northing • Zone 17
Permit Type: Modification
Description of Change: Addition of two (2) new Solar Mars 100 turbines, one (1) process heater, 48 catalytic heaters and the removal of one (1) existing Clark HRA-8T Compressor engine. Additionally, the synthetic minor limit on the two (2) existing Solar 70 turbines for GHG will be removed.

Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §§22-5-14.

The source is subject to 45CSR30. Changes authorized by this permit must also be incorporated into the facility's Title V operating permit. Commencement of the operations authorized by this permit shall be determined by the appropriate timing limitations associated with Title V permit revisions per 45CSR30.

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1.0. Emission Units

Source ID	Emission Point ID	Description	Make/Model	Design Capacity	Installed (year)
002-01 ⁽¹⁾	E01	Compressor Engine No. 1	Clark HRA-8T	1,320 hp	1953
002-07	E07	Compressor Engine No. 7	Clark TLA-8	2,700 hp	1969
002-08	E08	Compressor Engine No. 8	Clark TLA-8	2,700 hp	1969
002-09	E09	Compressor Engine No. 9	Clark TLA-8	2,700 hp	1970
002-10	E10	Compressor Engine No. 10	Clark TLAD-10	4,640 hp	1991
002-12	G3	Emergency Generator #2	Waukesha VGF48GL	1,063 hp	2009
002-13	E11	Compressor Engine No. 11	Caterpillar G3616	4,735 hp	2009
003-01	T01	Turbine #1	Solar Taurus 70	9,236 hp @ 59° F 11,557 hp @ 0° F	2013
003-02	T02	Turbine #2	Solar Taurus 70	9,236 hp @ 59° F 11,557 hp @ 0° F	2013
001-04	HTR2	Fuel Heater #2	n/a	0.75 MMBtu/hr	2013
001-05	HTR3	Fuel Heater #3	n/a	0.25 MMBtu/hr	2013
001-06	SH1	40 Catalytic Heaters	n/a	2.88 MMBtu/hr ⁽²⁾	2013
003-03	T03	Turbine #3	Solar Mars 100	15,067 hp @ 32° F	2016
003-04	T04	Turbine #4	Solar Mars 100	15,067 hp @ 32° F	2016
001-07	HTR4	Fuel Gas Heater	n/a	0.50 MMBTU/hr	2016
001-08	SH2	26 Catalytic Heaters	n/a	1.34 MMBtu/hr ⁽²⁾	2016
001-09	SH3	22 Catalytic Heaters	n/a	0.66 MMBtu/hr ⁽²⁾	2013

- (1) Engine shall be removed from service
 (2) Listed design capacity is aggregate for all heaters.

2.0. General Conditions

2.1. Definitions

- 2.1.1. All references to the “West Virginia Air Pollution Control Act” or the “Air Pollution Control Act” mean those provisions contained in W.Va. Code §§ 22-5-1 to 22-5-18.
- 2.1.2. The “Clean Air Act” means those provisions contained in 42 U.S.C. §§ 7401 to 7671q, and regulations promulgated thereunder.
- 2.1.3. “Secretary” means the Secretary of the Department of Environmental Protection or such other person to whom the Secretary has delegated authority or duties pursuant to W.Va. Code §§ 22-1-6 or 22-1-8 (45CSR§30-2.12.). The Director of the Division of Air Quality is the Secretary’s designated representative for the purposes of this permit.

2.2. Acronyms

CAAA	Clean Air Act Amendments	NO_x	Nitrogen Oxides
CBI	Confidential Business Information	NSPS	New Source Performance Standards
CEM	Continuous Emission Monitor	PM	Particulate Matter
CES	Certified Emission Statement	PM_{2.5}	Particulate Matter less than 2.5 μm in diameter
C.F.R. or CFR	Code of Federal Regulations		
CO	Carbon Monoxide	PM₁₀	Particulate Matter less than 10μm in diameter
C.S.R. or CSR	Codes of State Rules		
DAQ	Division of Air Quality	Ppb	Pounds per Batch
DEP	Department of Environmental Protection	Pph	Pounds per Hour
		Ppm	Parts per Million
dscm	Dry Standard Cubic Meter	Ppm_v or ppm_v	Parts per Million by Volume
FOIA	Freedom of Information Act	PSD	Prevention of Significant Deterioration
HAP	Hazardous Air Pollutant		
HON	Hazardous Organic NESHAP		
HP	Horsepower	Psi	Pounds per Square Inch
lbs/hr	Pounds per Hour	SIC	Standard Industrial Classification
LDAR	Leak Detection and Repair		
M	Thousand	SIP	State Implementation Plan
MACT	Maximum Achievable Control Technology	SO₂	Sulfur Dioxide
		TAP	Toxic Air Pollutant
MDHI	Maximum Design Heat Input	TPY	Tons per Year
MM	Million	TRS	Total Reduced Sulfur
MMBtu/hr or mmbtu/hr	Million British Thermal Units per Hour	TSP	Total Suspended Particulate
MMCF/hr or mmcf/hr	Million Cubic Feet per Hour	USEPA	United States Environmental Protection Agency
NA	Not Applicable	UTM	Universal Transverse Mercator
NAAQS	National Ambient Air Quality Standards	VEE	Visual Emissions Evaluation
		VOC	Volatile Organic Compounds
NESHAPS	National Emissions Standards for Hazardous Air Pollutants	VOL	Volatile Organic Liquids

2.3. Authority

This permit is issued in accordance with West Virginia Air Pollution Control Act W.Va. Code §§ 22-5-1. et seq. and the following Legislative Rules promulgated thereunder:

- 2.3.1. 45CSR13 – *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation;*
- 2.3.2. 45CSR14 – *Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration;*

2.4. Term and Renewal

- 2.4.1. This permit supersedes and replaces previously issued Permit R14-0013D. This Permit shall remain valid, continuous and in effect unless it is revised, suspended, revoked or otherwise changed under an applicable provision of 45CSR13 or any other applicable legislative rule;

2.5. Duty to Comply

- 2.5.1. The permitted facility shall be constructed and operated in accordance with the plans and specifications filed in Permit Applications R14-0013 through R14-0013E, and any modifications, administrative updates, or amendments thereto. The Secretary may suspend or revoke a permit if the plans and specifications upon which the approval was based are not adhered to; **[45CSR§§13-5.11 and 10.3.]**
- 2.5.2. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the West Virginia Code and the Clean Air Act and is grounds for enforcement action by the Secretary or USEPA;
- 2.5.3. Violations of any of the conditions contained in this permit, or incorporated herein by reference, may subject the permittee to civil and/or criminal penalties for each violation and further action or remedies as provided by West Virginia Code 22-5-6 and 22-5-7;
- 2.5.4. Approval of this permit does not relieve the permittee herein of the responsibility to apply for and obtain all other permits, licenses, and/or approvals from other agencies; i.e., local, state, and federal, which may have jurisdiction over the construction and/or operation of the source(s) and/or facility herein permitted.

2.6. Duty to Provide Information

The permittee shall furnish to the Secretary within a reasonable time any information the Secretary may request in writing to determine whether cause exists for administratively updating, modifying, revoking, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Secretary copies of records to be kept by the permittee. For information claimed to be confidential, the permittee shall furnish such records to the Secretary along with a claim of confidentiality in accordance with 45CSR31. If confidential information is to be sent

to USEPA, the permittee shall directly provide such information to USEPA along with a claim of confidentiality in accordance with 40 C.F.R. Part 2.

2.7. Duty to Supplement and Correct Information

Upon becoming aware of a failure to submit any relevant facts or a submittal of incorrect information in any permit application, the permittee shall promptly submit to the Secretary such supplemental facts or corrected information.

2.8. Administrative Update

The permittee may request an administrative update to this permit as defined in and according to the procedures specified in 45CSR13.

[45CSR§13-4.]

2.9. Permit Modification

The permittee may request a minor modification to this permit as defined in and according to the procedures specified in 45CSR13.

[45CSR§13-5.4.]

2.10 Major Permit Modification

The permittee may request a major modification as defined in and according to the procedures specified in 45CSR14 or 45CSR19, as appropriate.

[45CSR§13-5.1]

2.11. Inspection and Entry

The permittee shall allow any authorized representative of the Secretary, upon the presentation of credentials and other documents as may be required by law, to perform the following:

- a. At all reasonable times (including all times in which the facility is in operation) enter upon the permittee's premises where a source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times (including all times in which the facility is in operation) any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
- d. Sample or monitor at reasonable times substances or parameters to determine compliance with the permit or applicable requirements or ascertain the amounts and types of air pollutants discharged.

2.12. Emergency

- 2.12.1. An "emergency" means any situation arising from sudden and reasonable unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate

corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

- 2.12.2. Effect of any emergency. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions of Section 2.12.3 are met.
- 2.12.3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - a. An emergency occurred and that the permittee can identify the cause(s) of the emergency;
 - b. The permitted facility was at the time being properly operated;
 - c. During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and
 - d. The permittee submitted notice of the emergency to the Secretary within one (1) working day of the time when emission limitations were exceeded due to the emergency and made a request for variance, and as applicable rules provide. This notice must contain a detailed description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.
- 2.12.4. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.
- 2.12.5 The provisions of this section are in addition to any emergency or upset provision contained in any applicable requirement.

2.13. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it should have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in determining penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continued operations.

2.14. Suspension of Activities

In the event the permittee should deem it necessary to suspend, for a period in excess of sixty (60) consecutive calendar days, the operations authorized by this permit, the permittee shall notify the Secretary, in writing, within two (2) calendar weeks of the passing of the sixtieth (60) day of the suspension period.

2.15. Property Rights

This permit does not convey any property rights of any sort or any exclusive privilege.

2.16. Severability

The provisions of this permit are severable and should any provision(s) be declared by a court of competent jurisdiction to be invalid or unenforceable, all other provisions shall remain in full force and effect.

2.17. Transferability

This permit is transferable in accordance with the requirements outlined in Section 10.1 of 45CSR13. [45CSR§13-10.1.]

2.18. Notification Requirements

The permittee shall notify the Secretary, in writing, no later than thirty (30) calendar days after the actual startup of the operations authorized under this permit.

2.19. Credible Evidence

Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defense otherwise available to the permittee including, but not limited to, any challenge to the credible evidence rule in the context of any future proceeding.

3.0. Facility-Wide Requirements

3.1. Limitations and Standards

- 3.1.1. **Open burning.** The open burning of refuse by any person, firm, corporation, association or public agency is prohibited except as noted in 45CSR§6-3.1.
[45CSR§6-3.1.]
- 3.1.2. **Open burning exemptions.** The exemptions listed in 45CSR§6-3.1 are subject to the following stipulation: Upon notification by the Secretary, no person shall cause, suffer, allow or permit any form of open burning during existing or predicted periods of atmospheric stagnation. Notification shall be made by such means as the Secretary may deem necessary and feasible.
[45CSR§6-3.2.]
- 3.1.3. **Asbestos.** The permittee is responsible for thoroughly inspecting the facility, or part of the facility, prior to commencement of demolition or renovation for the presence of asbestos and complying with 40 C.F.R. § 61.145, 40 C.F.R. § 61.148, and 40 C.F.R. § 61.150. The permittee, owner, or operator must notify the Secretary at least ten (10) working days prior to the commencement of any asbestos removal on the forms prescribed by the Secretary if the permittee is subject to the notification requirements of 40 C.F.R. § 61.145(b)(3)(i). The USEPA, the Division of Waste Management, and the Bureau for Public Health - Environmental Health require a copy of this notice to be sent to them.
[40CFR§61.145(b) and 45CSR§34]
- 3.1.4. **Odor.** No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.
[45CSR§4-3.1] *[State Enforceable Only]*
- 3.1.5. **Permanent shutdown.** A source which has not operated at least 500 hours in one 12-month period within the previous five (5) year time period may be considered permanently shutdown, unless such source can provide to the Secretary, with reasonable specificity, information to the contrary. All permits may be modified or revoked and/or reapplication or application for new permits may be required for any source determined to be permanently shutdown.
[45CSR§13-10.5.]
- 3.1.6. **Standby plan for reducing emissions.** When requested by the Secretary, the permittee shall prepare standby plans for reducing the emissions of air pollutants in accordance with the objectives set forth in Tables I, II, and III of 45CSR11.
[45CSR§11-5.2.]

3.2. Monitoring Requirements

[Reserved]

3.3. Testing Requirements

- 3.3.1. **Stack testing.** As per provisions set forth in this permit or as otherwise required by the Secretary, in accordance with the West Virginia Code, underlying regulations, permits and orders, the permittee shall conduct test(s) to determine compliance with the emission limitations set forth in this permit and/or established or set forth in underlying documents. The Secretary, or his duly

authorized representative, may at his option witness or conduct such test(s). Should the Secretary exercise his option to conduct such test(s), the operator shall provide all necessary sampling connections and sampling ports to be located in such manner as the Secretary may require, power for test equipment and the required safety equipment, such as scaffolding, railings and ladders, to comply with generally accepted good safety practices. Such tests shall be conducted in accordance with the methods and procedures set forth in this permit or as otherwise approved or specified by the Secretary in accordance with the following:

- a. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with 40 C.F.R. Parts 60, 61, and 63 in accordance with the Secretary's delegated authority and any established equivalency determination methods which are applicable. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4. or 45CSR§13-5.4 as applicable.
- b. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with applicable requirements which do not involve federal delegation. In specifying or approving such alternative testing to the test methods, the Secretary, to the extent possible, shall utilize the same equivalency criteria as would be used in approving such changes under Section 3.3.1.a. of this permit. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4. or 45CSR§13-5.4 as applicable.
- c. All periodic tests to determine mass emission limits from or air pollutant concentrations in discharge stacks and such other tests as specified in this permit shall be conducted in accordance with an approved test protocol. Unless previously approved, such protocols shall be submitted to the Secretary in writing at least thirty (30) days prior to any testing and shall contain the information set forth by the Secretary. In addition, the permittee shall notify the Secretary at least fifteen (15) days prior to any testing so the Secretary may have the opportunity to observe such tests. This notification shall include the actual date and time during which the test will be conducted and, if appropriate, verification that the tests will fully conform to a referenced protocol previously approved by the Secretary.
- d. The permittee shall submit a report of the results of the stack test within sixty (60) days of completion of the test. The test report shall provide the information necessary to document the objectives of the test and to determine whether proper procedures were used to accomplish these objectives. The report shall include the following: the certification described in paragraph 3.5.1.; a statement of compliance status, also signed by a responsible official; and, a summary of conditions which form the basis for the compliance status evaluation. The summary of conditions shall include the following:
 1. The permit or rule evaluated, with the citation number and language;
 2. The result of the test for each permit or rule condition; and,
 3. A statement of compliance or noncompliance with each permit or rule condition.

[WV Code § 22-5-4(a)(14-15) and 45CSR13]

3.4. Recordkeeping Requirements

- 3.4.1. **Retention of records.** The permittee shall maintain records of all information (including monitoring data, support information, reports, and notifications) required by this permit recorded in a form suitable and readily available for expeditious inspection and review. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation. The files shall be maintained for at least five (5) years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent two (2) years of data shall be maintained on site. The remaining three (3) years of data may be maintained off site, but must remain accessible within a reasonable time. Where appropriate, the permittee may maintain records electronically (on a computer, on computer floppy disks, CDs, DVDs, or magnetic tape disks), on microfilm, or on microfiche.
- 3.4.2. **Odors.** For the purposes of 45CSR4, the permittee shall maintain a record of all odor complaints received, any investigation performed in response to such a complaint, and any responsive action(s) taken.
[45CSR§4. State Enforceable Only.]

3.5. Reporting Requirements

- 3.5.1. **Responsible official.** Any application form, report, or compliance certification required by this permit to be submitted to the DAQ and/or USEPA shall contain a certification by the responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- 3.5.2. **Confidential information.** A permittee may request confidential treatment for the submission of reporting required by this permit pursuant to the limitations and procedures of W.Va. Code § 22-5-10 and 45CSR31.
- 3.5.3. **Correspondence.** All notices, requests, demands, submissions and other communications required or permitted to be made to the Secretary of DEP and/or USEPA shall be made in writing and shall be deemed to have been duly given when delivered by hand, or mailed first class with postage prepaid to the address(es) set forth below or to such other person or address as the Secretary of the Department of Environmental Protection may designate:

If to the DAQ:
Director
WVDEP
Division of Air Quality
601 57th Street
Charleston, WV 25304-2345

If to the US EPA:
Associate Director
Office of Air Enforcement and Compliance Assistance
(3AP20)
U.S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029

3.5.4. Operating Fee

- 3.5.4.1. In accordance with 45CSR30 – Operating Permit Program, the permittee shall submit a certified emissions statement and pay fees on an annual basis in accordance with the submittal requirements of the Division of Air Quality. A receipt for the appropriate fee shall be

maintained on the premises for which the receipt has been issued, and shall be made immediately available for inspection by the Secretary or his/her duly authorized representative.

- 3.5.5. **Emission inventory.** At such time(s) as the Secretary may designate, the permittee herein shall prepare and submit an emission inventory for the previous year, addressing the emissions from the facility and/or process(es) authorized herein, in accordance with the emission inventory submittal requirements of the Division of Air Quality. After the initial submittal, the Secretary may, based upon the type and quantity of the pollutants emitted, establish a frequency other than on an annual basis.

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4.0. Source-Specific Requirements

4.1. Limitations and Standards

4.1.1. Only those emission units as identified in Table 1.0 are authorized by this permit. In accordance with the information filed in Permit Applications R14-0013E, the emission units identified under Table 1.0 of this permit shall be installed, maintained, and operated so as to minimize any fugitive escape of pollutants and shall not exceed the listed design capacities.

4.1.2. The facility shall employ three (3) Clark TLA-8 natural-gas fired compressor engines. The operation of these engines shall not exceed the following maximum combined operating and emission limitations:

a. The engines shall be limited to the maximum operating capacities as shown in Table 4.1.2(a).

Table 4.1.2(a)

Engine No. - Source ID -	Maximum Engine Rating ⁽¹⁾ (hp)	Total Combined Annual Operating Limit (bhp-hr/yr)
No. 7 - 002-07 -	2,700	70,956,000
No. 8 - 002-08 -	2,700	
No.9 - 002-09 -	2,700	

(1) Maximum rating based on standard operating conditions. Under ambient operating conditions (less than 40F), the maximum peak rating of each engine is 3,015 horsepower.

b. Emissions released from the engines shall not exceed the maximum individual hourly and total combined annual emission limits set forth in Table 4.1.2(b).

Table 4.1.2(b)

Emission Point ID	Pollutant	Emission Limits	
		Individual Hourly (g/hp-hr)	Total Combined Annual (tons/yr)
E07, E08, E09	NO _x	9.5	562.5
	CO	3.1	203.4

4.1.3. The facility shall employ one (1) Clark TLAD-10 natural-gas fired compressor engine. The operation of this engine shall not exceed the following maximum operating and emission limitations:

a. The engines shall be limited to the maximum operating capacities as shown in Table 4.1.3(a).

Table 4.1.3(a)

Engine No. - Source ID -	Maximum Engine Rating (hp)
No. 10 - 002-10 -	4,640

b. Emissions released from the engine shall not exceed the maximum hourly and annual emission limits set forth in Table 4.1.3(b).

Table 4.1.3(b)

Emission Point ID	Pollutant	Emission Factor (g/hp-hr)	Maximum Emission Rates	
			Hourly (lb/hr)	Annual (ton/yr)
E10	NO _x	2.0	20.5	89.6
	CO	2.1	22.5	98.5
	VOC	0.7	8.2	35.8
	SO ₂	0.003	0.1	0.2
	PM ⁽¹⁾	0.19	1.9	8.3

(1) All particulate matter emissions assumed to be less than PM_{2.5}. Includes condensables.

4.1.4. The facility shall employ one (1) Caterpillar G3616 natural-gas fired compressor engine. The operation of this engine shall not exceed the following maximum operating and emission limitations:

a. The engine shall be limited to the maximum operating capacities as shown in Table 4.1.4(a).

Table 4.1.4(a)

Engine No. - Source ID -	Maximum Engine Rating (hp)
No. 11 - 002-13 -	4,735

- b. Emissions released from the engine shall not exceed the maximum hourly and annual emission limits set forth in Table 4.1.4(b).

Table 4.1.4(b)

Emission Point ID	Pollutant	Emission Factor (g/hp-hr)	Maximum Emission Rates	
			Hourly (lb/hr)	Annual (ton/yr)
E11	NO _x	0.70	7.30	32.00
	CO	0.63	6.52	28.60
	VOC	0.16	1.70	7.42
	SO ₂	0.0024	0.02	0.11
	PM ⁽¹⁾	0.034	0.40	1.60
	Formaldehyde	0.114	1.19	5.22

(1) All particulate matter emissions assumed to be less than PM_{2.5}. Includes condensables.

- c. The permittee shall install, maintain and operate an oxidation catalyst on engine E11 to reduce CO, VOC, and formaldehyde emissions. The oxidation catalyst shall be utilized at all times the engine is operating.
- d. Pursuant to 40 CFR 63, Subpart ZZZZ, the permittee shall:
- (1) Reduce uncontrolled CO emissions by 93 percent or more; or
 - (2) Limit concentration of formaldehyde in the exhaust to 14 ppmvd or less at 15 percent O₂.
[40 CFR §63.6600 - Table 2a]
- e. Pursuant to 40 CFR 63, Subpart ZZZZ, the permittee shall, with respect to the oxidation catalyst:
- (1) Maintain the catalyst so that the pressure drop across the catalyst does not change by more than two inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst that was measured during the initial performance test; and
 - (2) Maintain the temperature of the exhaust so that the catalyst inlet temperature is greater than or equal to 450 F and less than or equal to 1350 F.
[40 CFR §63.6600 - Table 2b]
- f. The permittee shall regularly inspect, maintain, and repair engine E11 and its oxidation catalyst to assure proper operation. The engine and the oxidation catalyst shall be operated, maintained and serviced per manufacturer recommendations. Based on manufacturer recommendations, the permittee must either maintain on-site spare parts for use in immediate repair or participate in a quick turn-around catalyst element cleaning/loaner program with a catalyst supplier.
- g. The permittee shall comply with all applicable requirements of NSPS for Stationary Compression Ignition Internal Combustion Engines specified in 40 CFR Part 60, Subpart JJJJ.

4.1.5. The facility shall employ two (2) Solar Taurus 70 and two (2) Solar Mars 100 natural-gas fired turbines. The operation of these turbines shall not exceed the following maximum operating and emission limitations:

a. The turbines shall be limited to the maximum operating capacities as shown in Table 4.1.5(a).

Table 4.1.5(a)

Turbine No. - Source ID -	Maximum Turbine Rating (hp)
No. 1 - 003-01 -	9,236 hp @ 59° F 11,557 hp @ 0° F
No. 2 - 003-02 -	9,236 hp @ 59° F 11,557 hp @ 0° F
No. 3 - 003-03 -	15,067 hp @ 32° F
No. 4 - 003-04 -	15,067 hp @ 32° F

b. Emissions released from the turbines shall not exceed the maximum individual hourly (per operation mode) and total combined annual emission limits set forth in Table 4.1.5(b) and (c).

Table 4.1.5(b)

Emission Point ID	Pollutant	Maximum Emission Rates					Combined Annual (ton/yr)
		Individual Hourly (lb/hr)⁽¹⁾					
		Normal Load	Low Temp	Very Low Temp	Low- Load	Startup/ Shutdown ⁽¹⁾	
T01, T02	NO _x	5.04	15.00	42.84	24.56	2.40	47.57
	CO	5.12	21.73	32.60	1,708.23	214.60	103.01
	VOC	0.73	1.55	1.55	24.40	3.05	7.36
	SO ₂	4.70	4.70	4.70	4.70	4.70	0.52
	PM ⁽²⁾	0.61	0.61	0.61	0.61	0.61	5.38
	CO _{2e}	10,904	10,904	10,904	10,904	10,904	95,518
	Formaldehyde	0.06	0.06	0.06	0.06	0.06	0.52

(1) Operating modes are defined under 4.2.3(a). Startup/shutdown emissions are per cycle and not lb/hr.

(2) All particulate matter emissions assumed to be less than PM_{2.5}. Includes condensables.

Table 4.1.5(c)

Emission Point ID	Pollutant	Maximum Emission Rates				
		Individual Hourly (lb/hr) ⁽¹⁾				Combined Annual (ton/yr)
		Normal Load	Low Temp	Low-Load	Startup/Shutdown ⁽¹⁾	
T03, T04	NO _x	6.96	21.16	16.10	3.10	64.52
	CO	7.07	30.67	653.41	272.70	96.29
	VOC	0.81	1.75	7.47	3.12	7.62
	SO ₂	7.36	7.36	7.36	7.36	0.81
	PM ⁽²⁾	0.85	0.85	0.85	0.85	7.45
	CO _{2e}	15,087	15,087	15,087	15,087	132,159
	Formaldehyde	0.09	0.09	0.09	0.09	0.80

(1) Operating modes are defined under 4.2.4(a). Startup/shutdown emissions are per cycle and not lb/hr.

(2) All particulate matter emissions assumed to be less than PM_{2.5}. Includes condensables.

- c. Each Turbine shall be equipped with SoLoNO_xTM lean-premixed combustion technology to ensure uniform air/fuel mixture and to prevent formation of NO_x.
- d. Pursuant to 40 CFR 60, Subpart KKKK, the permittee meet the following requirements:
 - (1) You must meet the emission limits for NO_x specified in Table 1 to this subpart. **[40 CFR § 60.4320]**
 - (2) If your turbine is located in a continental area, you must comply with either paragraph (a)(1), (a)(2), or (a)(3) of this section.
 - (i) You must not cause to be discharged into the atmosphere from the subject stationary combustion turbine any gases which contain SO₂ in excess of 110 nanograms per Joule (ng/J) (0.90 pounds per megawatt-hour (lb/MWh)) gross output;
 - (ii) You must not burn in the subject stationary combustion turbine any fuel which contains total potential sulfur emissions in excess of 26 ng SO₂ /J (0.060 lb SO₂ /MMBtu) heat input. If your turbine simultaneously fires multiple fuels, each fuel must meet this requirement. **[40 CFR § 60.4330]**

4.1.6. The Fuel Heaters (001--04, 001-05, 001-07) and the Catalytic Heaters (001-06, 001-08, 001-09) shall operate according to the following requirements:

a. The maximum emissions from Fuel Heater 001-04 shall not exceed the limits given in the following table;

Table 4.1.6(a): Fuel Heater 001-04 Emission Limits

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
CO	0.06	0.27
NO _x	0.07	0.32

b. The maximum emissions from Fuel Heater 001-05 shall not exceed the limits given in the following table;

Table 4.1.6(b): Fuel Heater 001-05 Emission Limits

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
CO	0.02	0.09
NO _x	0.02	0.11

c. The maximum emissions from Fuel Heater 001-07 shall not exceed the limits given in the following table;

Table 4.1.6(c): Fuel Heater 001-07 Emission Limits

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
CO	0.04	0.18
NO _x	0.05	0.21

d. The maximum emissions from the Catalytic Heaters (001-06) shall not exceed the limits given in the following table;

Table 4.1.6(d): Catalytic Heaters (001-06) Emission Limits⁽¹⁾

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
CO	0.24	1.04
NO _x	0.28	1.24

(1) Both hourly and annual limits are aggregate limits for all 40 Catalytic Heaters.

- e. The maximum emissions from the Catalytic Heaters (001-08) shall not exceed the limits given in the following table;

Table 4.1.6(e): Catalytic Heaters (001-08) Emission Limits⁽¹⁾

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
CO	0.11	0.48
NO _x	0.13	0.57

(1) Both hourly and annual limits are aggregate limits for all 26 Catalytic Heaters.

- f. The maximum emissions from the Catalytic Heaters (001-09) shall not exceed the limits given in the following table;

Table 4.1.6(f): Catalytic Heaters (001-09) Emission Limits⁽¹⁾

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
CO	0.05	0.24
NO _x	0.06	0.28

(1) Both hourly and annual limits are aggregate limits for all 22 Catalytic Heaters.

- g. As the annual emission limits given in Table 4.1.6(a-f) are based on operating 8,760 hours/year, there is no limit on the annual hours of operation or fuel usage of the Fuel Heaters or the Catalytic Heaters.
- h. No person shall cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from any fuel burning unit which is greater than ten (10) percent opacity based on a six minute block average.
[45CSR§2-3.1.]

- 4.1.7. The Waukesha VGF48GL Emergency Generator (002-12) shall operate according to the following requirements:

- a. The maximum emissions from 002-12 shall not exceed the limits given in the following table;

Table 4.1.7(a): Emergency Generator 002-12 Emission Limits

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
CO	3.04	0.76
NO _x	4.68	1.17
VOC	0.61	0.15

- b. The Emergency Generator shall not operate in excess of 500 hours per year. Compliance with the Maximum Yearly Operation Limitation shall be determined using a twelve month rolling total. A twelve month rolling total shall mean the sum of the hours of operation at any given time during the previous twelve consecutive calendar months.
- c. The permittee shall maintain on-site verification that the Emergency Generator was manufactured prior to January 1, 2009.

- 4.1.8. The following conditions and requirements are specific to Heaters (HTR2, HTR3, HTR4):
- a. Heaters (HTR2, HTR3, HTR4) shall be designed and constructed with a maximum design heat input of 0.75 MMBtu/hr, 0.25 MMBTU/hr and 0.50 MMBTU/hr respectively. The condition satisfies compliance with the limitation of 45 CSR §2-3.1.
[45 CSR 2A-3.1.a.]
 - b. For the purpose of complying with Subpart DDDDD of Part 63 as Gas 1 units, the permittee shall perform a tune-up on each heater in accordance with 40 CFR §63.7540(a)(12). The first tune-up shall be completed no later than 61 months after initial start-up of the heater, and thereafter once every 61 months. If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup. Such tune-ups shall consist of the following:
 - i. As applicable, inspect the burner, and clean or replace any components of the burner as necessary (permittee may delay the burner inspection until the next scheduled unit shutdown, but inspected at least once every 72 months). At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment;
 - ii. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;
 - iii. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (permittee may delay the inspection until the next scheduled unit shutdown);
 - iv. Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_x requirement to which the unit is subject; and
 - v. Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer;
[40 CFR §§63.7540(a)(10), (12), and (13)]
- 4.1.9. **Operation and Maintenance of Air Pollution Control Equipment.** The permittee shall, to the extent practicable, install, maintain, and operate all pollution control equipment listed in Section 1.0 and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary.
[45CSR§13-5.11.]

4.2. Monitoring, Compliance Demonstration, Source-Specific Recording and Reporting Requirements

- 4.2.1. For the purpose of determining compliance with the operating limits set forth in Section 4.1.2. of this permit, the permittee shall monitor and record the actual brake horsepower-hours generated by each of the permitted engines. The records shall be maintained in a format that demonstrates compliance with the total maximum brake-horsepower hour limits established in Section 4.1.2. of this permit.
- 4.2.2. For the purpose of demonstrating compliance with the annual emission limits set forth in Section 4.1 of this permit, the permittee shall maintain records of the actual emissions calculated using the actual brake-horsepower hour records of Section 4.2.1 of this permit and the engine specific hourly emission factors. The hourly emission factors used to show compliance for engines E07 - E09 shall be 7.2 g-NOx/bhp-hr and 2.6 g-CO/bhp-hr.
- 4.2.3. The permittee shall calculate and record, on a monthly and rolling twelve month basis, the emissions of each pollutant limited under Table 4.1.5(b) generated by turbines 003-01 and 003-02. The calculation shall be based on the emission factors used in permit application R14-0013E and the following information:
- a. The permittee shall monitor and record the number of hours that the turbines 003-01 and 003-02 operate in the following operational modes:
 - (1) Normal: $\geq 50\%$ Load and ≥ 10 F;
 - (2) Low Temp: $< 10\text{F} \geq -20\text{F}$;
 - (3) Very Low Temp: $< -20\text{F}$; and
 - (4) Low-Load: $< 50\%$ Load.
 - b. The permittee shall monitor and record the number of startup/shutdowns of each turbine;
- 4.2.4. The permittee shall calculate and record, on a monthly and rolling twelve month basis, the emissions of each pollutant limited under Table 4.1.5(c) generated by turbines 003-03 and 003-04. The calculation shall be based on the emission factors used in permit application R14-0013E and the following information:
- a. The permittee shall monitor and record the number of hours that the turbines 003-03 and 003-04 operate in the following operational modes:
 - (1) Normal: $> 50\%$ Load and ≥ 0 F;
 - (2) Low Temp: $< 0\text{F}$; and
 - (3) Low-Load: $< 50\%$ Load.
 - b. The permittee shall monitor and record the number of startup/shutdowns of each turbine;
- 4.2.5. For the purposes of demonstrating compliance with the maximum usage limits set forth in 4.1.7(b), the permittee shall monitor and record the monthly and rolling twelve month hours of operation of the emergency generator.
- 4.2.6. The permittee shall meet all applicable Monitoring, Compliance Demonstration, Source-Specific Recording and Reporting Requirements as given under 40 CFR 60 Subpart JJJJ, 40 CFR 60, Subpart KKKK and 40 CFR 63, Subpart ZZZZ.

4.3. Testing Requirements

- 4.3.1. For the purpose of demonstrating compliance with the hourly emission limits set forth in Section 4.1.2. of this permit, the permittee shall conduct annual emissions testing for NO_x and CO emissions released from engines No.7 through No. 9 (emission points E07 through E09) using portable emissions analyzers.

Upon utilization of the air-to-fuel ratio monitoring established in Section 4.2.2. of permit R14-0013E, periodic emissions testing shall be performed once every five (5) years. This periodic testing may be performed using portable emissions analyzers.

- 4.3.2. In addition to the NO_x performance testing as required under 40 CFR 60, Subpart KKKK, within 60 days after achieving full load, but not later than 180 days after initial startup, and at such times thereafter as may be required by the Director, the permittee shall conduct, or have conducted, a performance test on each turbine to determine compliance with the “normal load” CO emission limit specified under Table 4.1.5(b) and (c) and in accordance with 3.3.1. The permittee shall use an appropriate EPA-approved test method as given under 40 CFR 60, Appendix A and approved in writing by the Director in a protocol submitted pursuant to 3.3.1(c). The testing shall take place while the engines are operating at “normal load” as defined under 4.2.3(a) and 4.2.4(a).
- 4.3.3. In addition to the NO_x performance testing as required under 40 CFR 60, Subpart KKKK, within 60 days after achieving full load, but not later than 180 days after initial startup, and at such times thereafter as may be required by the Director, the permittee shall conduct, or have conducted, a performance test on each turbine to determine compliance with the particulate matter emission limit (including condensables) specified under Table 4.1.5(b) and (c) and in accordance with 3.3.1. The permittee shall use an appropriate EPA-approved test method as given under 40 CFR 60, Appendix A and approved in writing by the Director in a protocol submitted pursuant to 3.3.1(c). The testing shall take place while the engines are operating at 100% of load or, if this is not practicable, the results of the test shall scaled up by an appropriate ration to represent operation at 100% load.
- 4.3.4. The permittee shall meet all applicable testing requirements as given under 40 CFR 60 Subpart JJJJ, 40 CFR 60, Subpart KKKK and 40 CFR 63, Subpart ZZZZ.

4.4. Recordkeeping Requirements

- 4.4.1. **Record of Monitoring.** The permittee shall keep records of monitoring information that include the following:
- a. The date, place as defined in this permit and time of sampling or measurements;
 - b. The date(s) analyses were performed;
 - c. The company or entity that performed the analyses;
 - d. The analytical techniques or methods used;
 - e. The results of the analyses; and
 - f. The operating conditions existing at the time of sampling or measurement.

- 4.4.2. **Record of Maintenance of Air Pollution Control Equipment.** For all pollution control equipment listed in Section 1.0, the permittee shall maintain accurate records of all required pollution control equipment inspection and/or preventative maintenance procedures.
- 4.4.3. **Record of Malfunctions of Air Pollution Control Equipment.** For all air pollution control equipment listed in Section 1.0, the permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of the air pollution control equipment during which excess emissions occur. For each such case, the following information shall be recorded:
- a. The equipment involved.
 - b. Steps taken to minimize emissions during the event.
 - c. The duration of the event.
 - d. The estimated increase in emissions during the event.

For each such case associated with an equipment malfunction, the additional information shall also be recorded:

- e. The cause of the malfunction.
 - f. Steps taken to correct the malfunction.
 - g. Any changes or modifications to equipment or procedures that would help prevent future recurrences of the malfunction.
- 4.4.4. The permittee shall meet all applicable record-keeping requirements as given under 40 CFR 60 Subpart JJJJ, 40 CFR 60, Subpart KKKK and 40 CFR 63, Subpart ZZZZ.
- 4.4.5. The permittee shall keep the following records in accordance with 40CFR§63.7555. This includes but is not limited to the following information during the tune up as required in Condition 4.1.8.b. and 40 CFR §63.7540:
- a. The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater.
 - b. A description of any corrective actions taken as a part of the tune-up.
[40 CFR §§63.7540(a)(10)(vi) and 63.7555]

4.5. Reporting Requirements

- 4.5.1. The permittee shall meet all applicable reporting requirements as given under 40 CFR 60 Subpart JJJJ, 40 CFR 60, Subpart KKKK and 40 CFR 63, Subpart ZZZZ.
- 4.5.2. The permittee shall submit “5-year Compliance Reports” for Heaters (HTR2, HTR3, HTR4) electronically using CEDRI that is accessed through the EPA’s Center Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form for this report is not available in CEDRI at the time the report is due, the permittee shall submit the report to the Administrator and Director using the addresses listed in Condition 3.5.3. The first compliance report shall be submitted no later than five years after the initial start-up of the unit and the first date ending on January 31. Subsequent reports shall be submitted once every five years afterwards. Such reports shall contain the information specified in 40 CFR §§63.7550(c)(5) (i)through (iv) and (xiv) which are:
- a. Permittee and facility name, and address;
 - b. Process unit information emission limitations, and operating limitations;
 - c. Date of report and beginning and ending dates of the reporting period;
 - d. Include the date of the most recent tune-up for each boiler; and
 - e. Include the date of the most recent burner inspection if it was not done on a 5-year period and was delayed until the next scheduled or unscheduled unit shutdown.

The permittee shall maintain records of such reports in accordance with Condition 3.4.1. **[40CFR §§63.7550(b), (b)(1), (c)(1), & (c)(5)(i) though (iii) and (xiv), and (h)(3)]**

CERTIFICATION OF DATA ACCURACY

I, the undersigned, hereby certify that, based on information and belief formed after reasonable inquiry, all information contained in the attached _____, representing the period beginning _____ and ending _____, and any supporting documents appended hereto, is true, accurate, and complete.

Signature¹ _____
(please use blue ink) Responsible Official or Authorized Representative Date

Name & Title _____
(please print or type) Name Title

Telephone No. _____ Fax No. _____

- ¹ This form shall be signed by a "Responsible Official." "Responsible Official" means one of the following:
- a. For a corporation: The president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:
 - (i) the facilities employ more than 250 persons or have a gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), or
 - (ii) the delegation of authority to such representative is approved in advance by the Director;
 - b. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;
 - c. For a municipality, State, Federal, or other public entity: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of U.S. EPA); or
 - d. The designated representative delegated with such authority and approved in advance by the Director.