# STATE OF MISSISSIPPI AIR POLLUTION CONTROL PERMIT

AND PREVENTION OF SIGNIFICANT **DETERIORATION AUTHORITY** TO CONSTRUCT AIR EMISSIONS EQUIPMENT THIS CERTIFIES THAT

> TVA Magnolia Combined Cycle 352 Highway 4 West Ashland, Mississippi **Benton County**

has been granted permission to construct air emissions equipment to comply with emission limitations, monitoring requirements and other conditions set forth herein. This permit is issued in accordance with the provisions of the Mississippi Air and Water Pollution Control Law (Section 49-17-1 et. seq., Mississippi Code of 1972), and the regulations and standards adopted and promulgated thereunder and under authority granted by the Environmental Protection Agency under 40 CFR 52.01 and 52.21.

MISSISSIPPI ENVIRONMENTAL QUALITY PERMIT BOARD

AUTHORIZED SIGNATURE MISSISSIPPI/DEPARTMENT OF ENVIRONMENTAL QUALITY

Issued: May 31,/2001 Modified: June 13, 2005, September 7, 2011, MAY 2 4 2012

Permit No.: 0200-00019

Page 2 of 18

Permit No.: 0200-00019

#### Part I

#### A. GENERAL CONDITIONS

- 1. This permit is for air pollution control purposes only. (Ref.: APC-S-2, Section I.D)
- 2. Any activities not identified in the application are not authorized by this permit. (Ref.: Miss. Code Ann. 49-17-29 1.b)
- 3. The knowing submittal of a permit application with false information may serve as the basis for the Permit Board to void the permit issued pursuant thereto or subject the applicant to penalties for operating without a valid permit pursuant to State Law. (Ref.: APC-S-2, Section II.B.5)
- 4. It is the responsibility of the applicant/permittee to obtain all other approvals, permits, clearances, easements, agreements, etc., which may be required including, but not limited to, all required local government zoning approvals or permits. (Ref.: APC-S-2, Section I.D.6)
- 5. The issuance of a permit does not release the permittee from liability for constructing or operating air emissions equipment in violation of any applicable statute, rule, or regulation of state or federal environmental authorities. (Ref.: APC-S-2, Section II.B.7)
- 6. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit, unless halting or reducing activity would create an imminent and substantial endangerment threatening the public health and safety of the lives and property of the people of this state. (Ref.: APC-S-2, Section II.B.15(a))
- 7. The permit and/or any part thereof may be modified, revoked, reopened, and reissued, or terminated for cause. Sufficient cause for a permit to be reopened shall exist when an air emissions stationary source becomes subject to Title V. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. (Ref.: APC-S-2, Section II.B.15(b))
- 8. The permit does not convey any property rights of any sort, or any exclusive privilege. (Ref.: APC-S-2, Section II.B.15(c))
- 9. The permittee shall furnish to the DEQ within a reasonable time any information the DEQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the DEQ copies of records required to be kept by the permit or, for information claimed to be confidential, the permittee shall furnish such records to the DEQ along with a claim of confidentiality. The permittee may furnish such records directly to the Administrator along with a claim of confidentiality. (Ref.: APC-S-2, Section II.B.15(d))
- 10. Design and Construction Requirements: The stationary source shall be designed and constructed so as to operate without causing a violation of an Applicable Rules and

Page 3 of 18 Permit No.: 0200-00019

Regulations, without interfering with the attainment and maintenance of State and National Ambient Air Quality Standards, and such that the emission of air toxics does not result in an ambient concentration sufficient to adversely affect human health and well-being or unreasonably and adversely affect plant or animal life beyond the stationary source boundaries. (Ref.: APC-S-2, Section V.A)

- 11. Solids Removal: The necessary facilities shall be constructed so that solids removed in the course of control of air emissions may be disposed of in a manner such as to prevent the solids from becoming windborne and to prevent the materials from entering State waters without the proper environmental permits. (Ref.: Miss. Code Ann. 49-17-29)
- 12. Diversion and Bypass of Air Pollution Controls: The air pollution control facilities shall be constructed such that diversion from or bypass of collection and control facilities is not needed except as provided for in Regulation APC-S-1, "Air Emission Regulations for the Prevention, Abatement, and Control of Air Contaminants", Section 10. (Ref.: APC-S-1, Section 10)
- 13. Fugitive Dust Emissions from Construction Activities: The construction of the stationary source shall be performed in such a manner so as to reduce fugitive dust emissions from construction activities to a minimum. (Ref.: APC-S-2, Section V.A.4)
- 14. Right of Entry: The permittee shall allow the Mississippi Department of Environmental Quality Office of Pollution Control and the Mississippi Environmental Quality Permit Board and/or their representatives upon presentation of credentials:
  - a) To enter upon the permittee's premises where an air emission source is located or in which any records are required to be kept under the terms and conditions of this permit; and
  - b) At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and to sample any air emissions. (Ref.: Miss. Code Ann. 49-17-21)
- 15. Permit Modification or Revocation: After notice and opportunity for a hearing, the Permit Board may modify the permit or revoke it in whole or in part for good cause shown including, but not limited to:
  - a) Persistent violation of any of the terms or conditions of this permit;
  - b) Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
  - c) A change in federal, state, or local laws or regulations that require either a temporary or permanent reduction or elimination of previously authorized air emission.

(Ref.: APC-S-2, Section II.C)

Page 4 of 18 Permit No.: 0200-00019

16. Public Record and Confidential Information: Except for data determined to be confidential under the Mississippi Air & Water Pollution Control Law, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Mississippi Department of Environmental Quality, Office of Pollution Control. (Ref.: Miss. Code Ann. 49-17-39)

- 17. Permit Transfer: This permit shall not be transferred except upon approval of the Permit Board. (Ref.: APC-S-2, Section XVI.B)
- 18. Severability: The provisions of this permit are severable. If any provision of the permit, or the application of any provision of the permit to any circumstances, is challenged or held invalid, the validity of the remaining permit provisions and/or portions thereof or their application to other persons or sets of circumstances, shall not be affected thereby. (Ref. APC-S-2, Section I.D.7)
- 19. Permit Expiration: The permit to construct will expire if construction does not begin within eighteen (18) months from the date of issuance or if construction is suspended for eighteen (18) months or more. (Ref.: APC-S-2, Section V.C.1)
- 20. Certification of Construction: A new stationary source issued a Permit to Construct cannot begin operation until certification of construction by the permittee. (Ref.: APC-S-2, Section V.D.3)
- 21. Beginning Operation: Except as prohibited in Part I, Condition 24 of this permit, after certification of construction by the permittee, the Permit to Construct shall be deemed to satisfy the requirement for a permit to operate until the date the application for issuance or modification of the Title V Permit or the application for issuance or modification of the State Permit to Operate, whichever is applicable, is due. This provision is not applicable to a source excluded from the requirement for a permit to operate as provided by APC-S-2, Section XIII.G. (Ref.: APC-S-2, Section V.D.4)
- 22. Application for a Permit to Operate: Except as otherwise specified in Part I, Condition 24 of this permit, the application for issuance or modification of the State Permit to Operate or the Title V Permit, whichever is applicable, is due twelve (12) months after beginning operation or such earlier date or time as specified in the Permit to Construct. The Permit Board may specify an earlier date or time for submittal of the application. Beginning operation will be assumed to occur upon certification of construction, unless the permittee specifies differently in writing. (Ref.: APC-S-2, Section V.D.5)
- 23. Operating Under a Permit to Construct: Except as otherwise specified in Part I, Condition 24 of this permit, upon submittal of a timely and complete application for issuance or modification of a State Permit to Operate or a Title V Permit, whichever is applicable, the applicant may continue to operate under the terms and conditions of the Permit to Construct and in compliance with the submitted application until the Permit Board issues, modifies, or denies the Permit to Operate. (Ref.: APC-S-2, Section V.D.6)
- 24. Application Requirements for a Permit to Operate for Moderate Modifications: For moderate modifications that require contemporaneous enforceable emissions reductions from more

Page 5 of 18 Permit No.: 0200-00019

than one emission point in order to "net" out of PSD/NSR, the applicable Title V Permit to Operate or State Permit to Operate must be modified prior to beginning operation of the modified facilities. (Ref.: APC-S-2, Section V.D.7)

# 25. Compliance Testing: Regarding compliance testing:

- a) The results of any emissions sampling and analysis shall be expressed both in units consistent with the standards set forth in any Applicable Rules and Regulations or this permit and in units of mass per time.
- b) Compliance testing will be performed at the expense of the permittee.
- c) Each emission sampling and analysis report shall include but not be limited to the following:
  - (1) detailed description of testing procedures;
  - (2) sample calculation(s);
  - (3) results; and
  - (4) comparison of results to all Applicable Rules and Regulations and to emission limitations in the permit.

(Ref.: APC-S-2, Section VI.B.3, 4, and 6)

# B. GENERAL NOTIFICATION REQUIREMENTS

- 1. Within fifteen (15) days of beginning actual construction, the permittee must notify DEQ in writing that construction has begun. (Ref.: APC-S-2, Section V.C.2)
- 2. The permittee must notify DEQ in writing when construction does not begin within eighteen (18) months of issuance or if construction is suspended for eighteen (18) months or more. (Ref.: APC-S-2, Section V.C.3)
- 3. Upon the completion of construction or installation of an approved stationary source or modification, the applicant shall notify the Permit Board that construction or installation was performed in accordance with the approved plans and specifications on file with the Permit Board. (Ref.: APC-S-2, Section V.D.1)
- 4. The Permit Board shall be promptly notified in writing of any change in construction from the previously approved plans and specifications or permit. If the Permit Board determines the changes are substantial, it may require the submission of a new application to construct with "as built" plans and specifications. Notwithstanding any provision herein to the contrary, the acceptance of an "as built" application shall not constitute a waiver of the right to seek compliance penalties pursuant to State Law. (Ref.: APC-S-2, Section V.D.2)

Page 6 of 18 Permit No.: 0200-00019

# Part II. EMISSION LIMITATIONS AND MONITORING REQUIREMENTS

Beginning Issuance Date, the permittee is authorized to construct air emissions equipment and emit air contaminants from the following:

# **General Electric Model 7FA Combustion Turbine Generator Sets**

Number of units: 3

Modes of Operation Simple and Combined Cycle Natural gas operation: (at 63°F, 60% RH, 14.52 psia)

Duct Firing Energy Input (one HRSG): 610.5 mmBtu/hr Electrical Capacity (one CTG): 170,300 KW Total Energy Input-HHV (one CTG/HRSG): 2,336 mmBtu/hr

Page 7 of 18 Permit No.: 0200-00019

#### Part II (Continued)

# EMISSION LIMITATIONS AND MONITORING REQUIREMENTS

Beginning **Issuance Date**, the permittee is authorized to construct air emissions equipment for the emission of air contaminants from Emission Point AA-001, the 2,336 MMBTU/hr (HHV) natural gas-fired combined cycle combustion turbine generator (CTG) with a heat recovery steam generator (HRSG) and a dry low NO<sub>x</sub> burner combined with a selective catalytic reduction (SCR) reactor for control of NO<sub>x</sub> emissions.

Selective catalytic reduction (SCR) will be included for control of NOx emissions and operated as soon as and as long as the unit operating conditions are amenable to its effective use, or when the unit is operating in normal operating conditions, whichever condition is attainable first.

Normal operating conditions shall be defined at the point when the turbine has reached Mode 6Q. Mode 6Q is achieved when the calculated combustion reference temperature (TTRFI) reaches 2300 degrees F. Reduced load operation is authorized to accommodate periods of reduced demands provided the maximum lbs/hr emission limitations below are not exceeded.

These emission points are subject to the Acid Rain Program Regulations as specified in 40 CFR 72-78, and the permittee must comply with all applicable requirements of said standards.

#### EMISSION LIMITATIONS With Duct Firing (Case 1)

Particulate Matter	27.3 lbs/hr and 71.66 tons/year	as determined by EPA
--------------------	---------------------------------	----------------------

Reference Methods 1-5, 40 CFR 60, Appendix A.

PM<sub>10</sub> 27.3 lbs/hr and 71.66 tons/year, as determined by EPA

Reference Method 201 or 201A in conjunction with Reference Method 202, 40 CFR 51, Appendix M.

Sulfur Dioxide 7.4 lbs/hr and 19.425 tons/year, as determined by EPA

Reference Method 6C, 40 CFR 60, Appendix A.

Nitrogen Oxides 3.5 PPM at 15% oxygen on a dry basis, not to exceed

34.3 lbs/hr, both limits are based on a 3-hour rolling average, and 90.0 tons/year based on a 12-month rolling average, as determined by EPA Reference Method 20, 40 CFR 60,

Appendix A.

Carbon Monoxide 20 PPM at 15% oxygen on a dry basis, not to exceed

97.9 lbs/hr, both limits are based on a 3-hour rolling average, and 256.9 tons/year based on a 12-month rolling average, as determined by EPA Reference Method 10, 40 CFR 60,

Appendix A.

VOC (non-methane) 16.4 lbs/hr and 43.1 tons/year, as determined by EPA

Reference Method 25, 40 CFR 60, Appendix A.

Page 8 of 18 Permit No.: 0200-00019

# EMISSION LIMITATIONS Without Duct Firing (Case 2)

Particulate Matter 20.5 lbs/hr and 13.3 tons/year, as determined by EPA

Reference Methods 1-5, 40 CFR 60, Appendix A.

PM<sub>10</sub> 20.5 lbs/hr and 13.3 tons/year, as determined by EPA

Reference Method 201 or 201A in conjunction with

Reference Method 202, 40 CFR 51, Appendix M.

Sulfur Dioxide 5.9 lbs/hr and 3.84 tons/year, as determined by EPA

Reference Method 6C, 40 CFR 60, Appendix A.

Nitrogen Oxides (combined cycle) 3.5 PPM at 15% oxygen on a dry basis, not to exceed

27.9 lbs/hr, both limits are based on a 3-hour rolling average, and 18.14 tons/year based on a 12-month rolling average, as determined by EPA Reference Method 20, 40 CFR 60,

Appendix A.

Nitrogen Oxides (simple cycle) 9.0 PPM at 15% oxygen on a dry basis, not to exceed

66.3 lbs/hr, both limits are based on a 3-hour rolling average, and 73.92 tons/year based on a 12-month rolling average, as determined by EPA Reference Method 20, 40 CFR 60,

Appendix A.

Carbon Monoxide 7.6 PPM at 15% oxygen on a dry basis, not to exceed

33.5 lbs/hr, both limits are based on a 3-hour rolling average, and 21.78 tons/year based on a 12-month rolling average, as determined by EPA Reference Method 10, 40 CFR 60,

Appendix A.

VOC (non-methane) 3.2 lbs/hr and 2.08 tons/year, as determined by EPA

Reference Method 25, 40 CFR 60, Appendix A.

# EMISSION LIMITATIONS During Periods of Startup/Shutdown

Particulate Matter 3.27 tons/year, as determined by EPA Reference Methods 1-

5, 40 CFR 60, Appendix A.

PM<sub>10</sub> 3.27 tons/year, as determined by EPA Reference Method 201

or 201A in conjunction with Reference Method 202, 40 CFR

51, Appendix M.

Sulfur Dioxide 0.4 tons/year, as determined by EPA Reference Method 6C,

40 CFR 60, Appendix A.

Page 9 of 18 Permit No.: 0200-00019

Nitrogen Oxides 158.5 tons/year, as determined by EPA Reference

Method 20, 40 CFR 60, Appendix A.

Carbon Monoxide 230.6 tons/year, as determined by EPA Reference Method

10, 40 CFR 60, Appendix A.

VOC (non-methane) 105.8 tons/year, as determined by EPA Reference Method

25, 40 CFR 60, Appendix A.

Opacity (during all times) 10% as determined by EPA Reference Method 9, 40 CFR 60,

Appendix A.

The permittee shall comply with the emission limitations and monitoring requirements specified in this permit, except during periods of startup and shutdowns. However, the permittee shall meet with the tons/year emission limits to include emissions during periods of startup and shutdown.

A <u>startup</u> event shall not exceed 6.0 hour duration and a <u>shutdown</u> event shall not exceed a 1.0 hour duration. A period of <u>startup</u> is defined as commencing when fuel is first combusted in the combustion turbine, and ending upon the turbine reaching Mode 6Q. <u>Shutdown</u> shall be defined as the period beginning when the combustion turbine leaves operational Mode 6Q and ending when combustion has ceased. The permittee shall monitor and maintain records of the duration of time this Emission Point engages in periods of both startups and shutdowns.

All test methods specified above shall be those versions, or their approved equivalents, which are in effect Issuance Date.

Page 10 of 18 Permit No.: 0200-00019

#### Part II (Continued)

# EMISSION LIMITATIONS AND MONITORING REQUIREMENTS

Beginning **Issuance Date**, the permittee is authorized to construct air emissions equipment for the emission of air contaminants from Emission Point AA-002, the 2,336 MMBTU/hr (HHV) natural gas-fired combined cycle combustion turbine generator (CTG) with a heat recovery steam generator (HRSG) and a dry low NO<sub>x</sub> burner combined with a selective catalytic reduction (SCR) reactor for control of NO<sub>x</sub> emissions.

Selective catalytic reduction (SCR) will be included for control of NOx emissions and operated as soon as and as long as the unit operating conditions are amenable to its effective use, or when the unit is operating in normal operating conditions, whichever condition is attainable first.

Normal operating conditions shall be defined at the point when the turbine has reached Mode 6Q. Mode 6Q is achieved when the calculated combustion reference temperature (TTRFI) reaches 2300 degrees F. Reduced load operation is authorized to accommodate periods of reduced demands provided the maximum lbs/hr emission limitations below are not exceeded.

These emission points are subject to the Acid Rain Program Regulations as specified in 40 CFR 72-78, and the permittee must comply with all applicable requirements of said standards.

#### EMISSION LIMITATIONS With Duct Firing (Case 1)

Particulate Matter	27.3 lbs/hr and 71.66 tons/year	as determined by EPA
--------------------	---------------------------------	----------------------

Reference Methods 1-5, 40 CFR 60, Appendix A.

PM<sub>10</sub> 27.3 lbs/hr and 71.66 tons/year, as determined by EPA

Reference Method 201 or 201A in conjunction with Reference Method 202, 40 CFR 51, Appendix M.

Sulfur Dioxide 7.4 lbs/hr and 19.425 tons/year, as determined by EPA

Reference Method 6C, 40 CFR 60, Appendix A.

Nitrogen Oxides 3.5 PPM at 15% oxygen on a dry basis, not to exceed

34.3 lbs/hr, both limits are based on a 3-hour rolling average, and 90.0 tons/year based on a 12-month rolling average, as determined by EPA Reference Method 20, 40 CFR 60,

Appendix A.

Carbon Monoxide 20 PPM at 15% oxygen on a dry basis, not to exceed

97.9 lbs/hr, both limits are based on a 3-hour rolling average, and 256.9 tons/year based on a 12-month rolling average, as determined by EPA Reference Method 10, 40 CFR 60,

Appendix A.

VOC (non-methane) 16.4 lbs/hr and 43.1 tons/year, as determined by EPA

Reference Method 25, 40 CFR 60, Appendix A.

Page 11 of 18 Permit No.: 0200-00019

# EMISSION LIMITATIONS Without Duct Firing (Case 2)

Particulate Matter 20.5 lbs/hr and 13.3 tons/year, as determined by EPA

Reference Methods 1-5, 40 CFR 60, Appendix A.

PM<sub>10</sub> 20.5 lbs/hr and 13.3 tons/year, as determined by EPA

Reference Method 201 or 201A in conjunction with

Reference Method 202, 40 CFR 51, Appendix M.

Sulfur Dioxide 5.9 lbs/hr and 3.84 tons/year, as determined by EPA

Reference Method 6C, 40 CFR 60, Appendix A.

Nitrogen Oxides (combined cycle) 3.5 PPM at 15% oxygen on a dry basis, not to exceed

27.9 lbs/hr, both limits are based on a 3-hour rolling average, and 18.14 tons/year based on a 12-month rolling average, as determined by EPA Reference Method 20, 40 CFR 60,

Appendix A.

Nitrogen Oxides (simple cycle) 9.0 PPM at 15% oxygen on a dry basis, not to exceed

66.3 lbs/hr, both limits are based on a 3-hour rolling average, and 73.92 tons/year based on a 12-month rolling average, as determined by EPA Reference Method 20, 40 CFR 60,

Appendix A.

Carbon Monoxide 7.6 PPM at 15% oxygen on a dry basis, not to exceed

33.5 lbs/hr, both limits are based on a 3-hour rolling average, and 21.78 tons/year based on a 12-month rolling average, as determined by EPA Reference Method 10, 40 CFR 60,

Appendix A.

VOC (non-methane) 3.2 lbs/hr and 2.08 tons/year, as determined by EPA

Reference Method 25, 40 CFR 60, Appendix A.

# EMISSION LIMITATIONS During Periods of Startup/Shutdown

Particulate Matter 3.27 tons/year, as determined by EPA Reference Methods 1-

5, 40 CFR 60, Appendix A.

PM<sub>10</sub> 3.27 tons/year, as determined by EPA Reference Method 201

or 201A in conjunction with Reference Method 202, 40 CFR

51, Appendix M.

Sulfur Dioxide 0.4 tons/year, as determined by EPA Reference Method 6C,

40 CFR 60, Appendix A.

Page 12 of 18 Permit No.: 0200-00019

Nitrogen Oxides 158.5 tons/year, as determined by EPA Reference

Method 20, 40 CFR 60, Appendix A.

Carbon Monoxide 230.6 tons/year, as determined by EPA Reference Method

10, 40 CFR 60, Appendix A.

VOC (non-methane) 105.8 tons/year, as determined by EPA Reference Method

25, 40 CFR 60, Appendix A.

Opacity (during all times) 10% as determined by EPA Reference Method 9, 40 CFR 60,

Appendix A.

The permittee shall comply with the emission limitations and monitoring requirements specified in this permit, except during periods of startup and shutdowns. However, the permittee shall meet with the tons/year emission limits to include emissions during periods of startup and shutdown.

A <u>startup</u> event shall not exceed 6.0 hour duration and a <u>shutdown</u> event shall not exceed a 1.0 hour duration. A period of <u>startup</u> is defined as commencing when fuel is first combusted in the combustion turbine, and ending upon the turbine reaching Mode 6Q. <u>Shutdown</u> shall be defined as the period beginning when the combustion turbine leaves operational Mode 6Q and ending when combustion has ceased. The permittee shall monitor and maintain records of the duration of time this Emission Point engages in periods of both startups and shutdowns.

All test methods specified above shall be those versions, or their approved equivalents, which are in effect **Issuance Date**.

Page 13 of 18 Permit No.: 0200-00019

#### Part II (Continued)

# EMISSION LIMITATIONS AND MONITORING REQUIREMENTS

Beginning **Issuance Date**, the permittee is authorized to construct air emissions equipment for the emission of air contaminants from Emission Point AA-003, the 2,336 MMBTU/hr (HHV) natural gas-fired combined cycle combustion turbine generator (CTG) with a heat recovery steam generator (HRSG) and a dry low NO<sub>x</sub> burner combined with a selective catalytic reduction (SCR) reactor for control of NO<sub>x</sub> emissions.

Selective catalytic reduction (SCR) will be included for control of NOx emissions and operated as soon as and as long as the unit operating conditions are amenable to its effective use, or when the unit is operating in normal operating conditions, whichever condition is attainable first.

Normal operating conditions shall be defined at the point when the turbine has reached Mode 6Q. Mode 6Q is achieved when the calculated combustion reference temperature (TTRFI) reaches 2300 degrees F. Reduced load operation is authorized to accommodate periods of reduced demands provided the maximum lbs/hr emission limitations below are not exceeded.

These emission points are subject to the Acid Rain Program Regulations as specified in 40 CFR 72-78, and the permittee must comply with all applicable requirements of said standards.

#### EMISSION LIMITATIONS With Duct Firing (Case 1)

Particulate Matter	27.3 lbs/hr and 71.66 tons/year, as determined by EPA
--------------------	---

Reference Methods 1-5, 40 CFR 60, Appendix A.

PM<sub>10</sub> 27.3 lbs/hr and 71.66 tons/year, as determined by EPA

Reference Method 201 or 201A in conjunction with Reference Method 202, 40 CFR 51, Appendix M.

Sulfur Dioxide 7.4 lbs/hr and 19.425 tons/year, as determined by EPA

Reference Method 6C, 40 CFR 60, Appendix A.

Nitrogen Oxides 3.5 PPM at 15% oxygen on a dry basis, not to exceed

34.3 lbs/hr, both limits are based on a 3-hour rolling average, and 90.0 tons/year based on a 12-month rolling average, as determined by EPA Reference Method 20, 40 CFR 60,

Appendix A.

Carbon Monoxide 20 PPM at 15% oxygen on a dry basis, not to exceed

97.9 lbs/hr, both limits are based on a 3-hour rolling average, and 256.9 tons/year based on a 12-month rolling average, as determined by EPA Reference Method 10, 40 CFR 60,

Appendix A.

VOC (non-methane) 16.4 lbs/hr and 43.1 tons/year, as determined by EPA

Reference Method 25, 40 CFR 60, Appendix A.

Page 14 of 18 Permit No.: 0200-00019

# EMISSION LIMITATIONS Without Duct Firing (Case 2)

Particulate Matter 20.5 lbs/hr and 13.3 tons/year, as determined by EPA

Reference Methods 1-5, 40 CFR 60, Appendix A.

PM<sub>10</sub> 20.5 lbs/hr and 13.3 tons/year, as determined by EPA

Reference Method 201 or 201A in conjunction with

Reference Method 202, 40 CFR 51, Appendix M.

Sulfur Dioxide 5.9 lbs/hr and 3.84 tons/year, as determined by EPA

Reference Method 6C, 40 CFR 60, Appendix A.

Nitrogen Oxides (combined cycle) 3.5 PPM at 15% oxygen on a dry basis, not to exceed

27.9 lbs/hr, both limits are based on a 3-hour rolling average, and 18.14 tons/year based on a 12-month rolling average, as determined by EPA Reference Method 20, 40 CFR 60,

Appendix A.

Nitrogen Oxides (simple cycle) 9.0 PPM at 15% oxygen on a dry basis, not to exceed

66.3 lbs/hr, both limits are based on a 3-hour rolling average, and 73.92 tons/year based on a 12-month rolling average, as determined by EPA Reference Method 20, 40 CFR 60,

Appendix A.

Carbon Monoxide 7.6 PPM at 15% oxygen on a dry basis, not to exceed

33.5 lbs/hr, both limits are based on a 3-hour rolling average, and 21.78 tons/year based on a 12-month rolling average, as determined by EPA Reference Method 10, 40 CFR 60,

Appendix A.

VOC (non-methane) 3.2 lbs/hr and 2.08 tons/year, as determined by EPA

Reference Method 25, 40 CFR 60, Appendix A.

#### EMISSION LIMITATIONS During Periods of Startup/Shutdown

Particulate Matter 3.27 tons/year, as determined by EPA Reference Methods 1-

5, 40 CFR 60, Appendix A.

PM<sub>10</sub> 3.27 tons/year, as determined by EPA Reference Method 201

or 201A in conjunction with Reference Method 202, 40 CFR

51, Appendix M.

Sulfur Dioxide 0.4 tons/year, as determined by EPA Reference Method 6C,

40 CFR 60, Appendix A.

Page 15 of 18 Permit No.: 0200-00019

Nitrogen Oxides 158.5 tons/year, as determined by EPA Reference

Method 20, 40 CFR 60, Appendix A.

Carbon Monoxide 230.6 tons/year, as determined by EPA Reference Method

10, 40 CFR 60, Appendix A.

VOC (non-methane) 105.8 tons/year, as determined by EPA Reference Method

25, 40 CFR 60, Appendix A.

Opacity (during all times) 10% as determined by EPA Reference Method 9, 40 CFR 60,

Appendix A.

The permittee shall comply with the emission limitations and monitoring requirements specified in this permit, except during periods of startup and shutdowns. However, the permittee shall meet with the tons/year emission limits to include emissions during periods of startup and shutdown.

A <u>startup</u> event shall not exceed 6.0 hour duration and a <u>shutdown</u> event shall not exceed a 1.0 hour duration. A period of <u>startup</u> is defined as commencing when fuel is first combusted in the combustion turbine, and ending upon the turbine reaching Mode 6Q. <u>Shutdown</u> shall be defined as the period beginning when the combustion turbine leaves operational Mode 6Q and ending when combustion has ceased. The permittee shall monitor and maintain records of the duration of time this Emission Point engages in periods of both startups and shutdowns.

All test methods specified above shall be those versions, or their approved equivalents, which are in effect Issuance Date.

Page 16 of 18 Permit No.: 0200-00019

# Part III OTHER REQUIREMENTS CONTINUED (CONTINUED)

(1) The turbines are subject to and shall comply with all applicable requirements of the New Source Performance Standards, as described in 40 CFR 60, Subpart A - General Provisions, and the specific requirements outlined in 60.330, Subpart GG - Standards of Performance for Stationary Gas Turbines.

#### **Standards**

(a) The permittee shall comply with the requirements listed in 40 CFR 60, Subpart GG, Section 60.332.

#### **Monitoring Requirements**

(b) The permittee shall comply with the requirements listed in 40 CFR 60, Subpart GG, Section 60.334.

# **Test Methods and Procedures**

- (c) The permittee shall comply with the requirements listed in 40 CFR 60, Subpart GG, Section 60.335.
- (2) For each turbine, the permittee shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight.
- (3) For each turbine, the permittee shall not use any other fuel other than natural gas.
- (4) For each turbine, the permittee shall install, calibrate, maintain, and operate continuous monitoring systems for NO<sub>x</sub> (as specified in 40 CFR 60.334, Appendix B and 40 CFR 75), CO (as specified in 40 CFR 60, Appendix B, and 40 CFR 75) and O<sub>2</sub> (as specified in 40 CFR 60, Appendix B, and 40 CFR 75). These monitoring systems must comply with all applicable requirements specified in §60.334, §60.13 and Appendix B of 40 CFR 60 and 40 CFR 75. In addition, the permittee must comply with the reporting and recordkeeping requirements specified in 40 CFR 60 and 40 CFR 75.
- (5) The duct burners, associated with Emission Points AA-001 through AA-003, are subject to and shall comply with all applicable requirements of the New Source Performance Standards, as described in 40 CFR 60, Subpart A General Provisions and Subpart Da Standards of Performance for Electric Utility Steam Generating Units.

#### **Standards**

(a) The permittee shall comply with the standards for particulate matter listed in 40 CFR 60, Subpart Da, Section 60.42a.

Page 17 of 18 Permit No.: 0200-00019

- (b) The permittee shall comply with the standards for sulfur dioxide listed in 40 CFR 60, Subpart Da, Section 60.43a.
- (c) The permittee shall comply with the standards for nitrogen oxides listed in 40 CFR 60, Subpart Da, Section 60.44a.

## **Monitoring Requirements**

(d) The permittee shall comply with the requirements listed in 40 CFR 60, Subpart Da, Section 60.47a.

## **Reporting Requirements**

- (e) The permittee shall comply with the requirements listed in 40 CFR 60, Subpart A, Section 60.7 and 40 CFR 60, Subpart Da, Section 60.49a.
- (6) The combustion turbines and duct burners associated with Emission Points AA-001 through AA-003 shall be operated in a manner consistent with good air pollution control practices to minimize emissions during startups, and shutdowns including:
  - (a) Operation in accordance with the manufacturer's written instructions or other written instructions developed and maintained by the permittee, which shall include at a minimum the following measures:
    - (i) Review of operating parameters of the unit during startups or shutdowns as necessary to make adjustments to reduce or eliminate excess emissions;
    - (ii) Operation of the SCR system as soon as and as long as the unit operating conditions are amenable to its effective use.
  - (b) Maintenance of the SCR systems in accordance with written procedures developed and maintained by the permittee, which procedures shall be reviewed at least annually.
- (7) For Emission Points AA-001 through AA-003, a record of all startups or shutdowns of the associated combustion turbines, duct burners, and SCR systems shall be kept and retained for a period of three (3) years and shall be made available to the Mississippi Department of Environmental Quality Office of Pollution Control, the Mississippi Environmental Quality Permit Board and/or their authorized representatives upon request. Such records shall include the time and date of such startups and shutdowns and confirmation that good air pollution control practices, as provided in paragraph (10) above, were followed.

Page 18 of 18 Permit No.: 0200-00019

- (8) The permittee shall submit semiannual reports providing the summary of emissions in tons/year of NO<sub>X</sub> and CO based on CEM data for each consecutive 365-day rolling total. This report is due by January 31 and July 31 of each calendar year. All records required by this permit shall be maintained for review for at least five years from the date the report was generated.
- (9) For Emission Points AA-001 through AA-003, each turbine is limited to the following operation schedule:
  - (a) The permittee is limited to operating the turbines in normal operation (periods other than during startups and shutdowns) for not more than 15,304,730 MMBtu per year on a rolling 12-month total.
  - (b) The permittee is limited to operating the duct burners in normal operation for not more than 3,205,125 MMBtu per year on a rolling 12-month total.
  - (c) The permittee is limited to 871 hours/year operation on a rolling 12-month total during periods of startups and shutdowns.
- (10) For Emission Points AA-001 through AA-003, the permittee shall limit formaldehyde emissions to 9.9 tons/year on a rolling 12-month total, as determined by EPA Reference Method 308 or any other EPA approved method.
- (11) For Emission Points AA-001 though AA-003, the permittee shall submit semi-annual reports showing the hours of operation during periods of startup and shutdown and heat input during normal operation on a monthly basis and on a 12 month rolling total. Each report is due by January 31 and July 31 of each calendar year. All records required by this permit shall be maintained for review for at least five years from the date of the sampling, measuring, or report.

Page 19 of 19 Permit No.: 0200-00019