# STATE OF MISSISSIPPI
# AIR POLLUTION CONTROL PERMIT

AND PREVENTION OF SIGNIFICANT DETERIORATION AUTHORITY TO CONSTRUCT AIR EMISSIONS EQUIPMENT

**THIS CERTIFIES THAT**

NRG Wholesale Generation LP
2446 Highway 407
French Camp, Mississippi
Choctaw 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**

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**AUTHORIZED SIGNATURE**
**MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY**

Issued: _____ Permit No.: 0400-00018

## Part I

## A. GENERAL CONDITIONS

1. This permit is for air pollution control purposes only. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.1.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.: 11 Miss. Admin. Code Pt. 2, R. 2.2.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.: 11 Miss. Admin. Code Pt. 2, R. 2.1.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.: 11 Miss. Admin. Code Pt. 2, R. 2.2.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.: 11 Miss. Admin. Code Pt. 2, R. 2.2.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.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(15)(b).)

8. The permit does not convey any property rights of any sort, or any exclusive privilege. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.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.: 11 Miss. Admin. Code Pt. 2, R. 2.2.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 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.: 11 Miss. Admin. Code Pt. 2, R. 2.5.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 11 Miss. Admin. Code Pt. 2, R. 1.1.10, "Air Emission Regulations for the Prevention, Abatement, and Control of Air Contaminants", Section 10. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.10.)

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.: 11 Miss. Admin. Code Pt. 2, R. 2.5.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.: 11 Miss. Admin. Code Pt. 2, R. 2.2.C.)

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.: 11 Miss. Admin. Code Pt. 2, R. 2.16.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. 11 Miss. Admin. Code Pt. 2, R. 2.1.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.: 11 Miss. Admin. Code Pt. 2, R. 2.5.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.: 11 Miss. Admin. Code Pt. 2, R. 2.5.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 11 Miss. Admin. Code Pt. 2, R. 2.13.G. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.5.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.: 11 Miss. Admin. Code Pt. 2, R. 2.5.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.: 11 Miss. Admin. Code Pt. 2, R. 2.5.D(6).)

24. Application Requirements for a Permit to Operate for Moderate Modifications: For moderate modifications that require contemporaneous enforceable emissions reductions from more 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.: 11 Miss. Admin. Code Pt. 2, R. 2.5.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.: 11 Miss. Admin. Code Pt. 2, R. 2.6.B(3), (4), & (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.: 11 Miss. Admin. Code Pt. 2, R. 2.5.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.: 11 Miss. Admin. Code Pt. 2, R. 2.5.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.: 11 Miss. Admin. Code Pt. 2, R. 2.5.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.: 11 Miss. Admin. Code Pt. 2, R. 2.5.D(2).)

## Part II.
## EMISSION LIMITATIONS AND MONITORING REQUIREMENTS

**Beginning Issuance Date, the permittee is authorized to construct air emissions equipment and emit air contaminants from Emission Point AA-001, the Natural Gas 2,126MMBtu/hr Unit 1 combustion turbine with supplemental 258.9 MMBtu/hr duct burners equipped with a Selective Catalytic Reduction (SCR) system for NOx control.**

**The air emissions equipment shall be constructed to comply with the emission limitations and monitoring requirements specified below, excluding periods of startup and shutdown.**

### EMISSIONS LIMITATIONS

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| **Particulate Matter/$PM_{10}$** | **20.59 lbs/hr and 90.18 tons/year, as determined by EPA Test Methods 1-5, 40 CFR 60, Appendix A.** |
| **$PM_{2.5}$** | **20.59 lbs/hr and 90.18 tons/year as determined by EPA Test Method 202, 40 CFR 51, Appendix M.** |
| **Sulfur Dioxide** | **1.38 lbs/hr and 6.04 tons/year, as determined by EPA Test Method 6, 40 CFR 60, Appendix A.** |
| **Nitrogen Oxides** | **3 ppmv at 15% $O_2$, not to exceed 23.45 lbs/hr both based on 3-hour rolling average, and 102.72 tons/year as determined by EPA Test Method 7, 40 CFR 60, Appendix A.** |
| **Carbon Monoxide** | **10 ppmv at 15% $O_2$, not to exceed 44.82 lbs/hr both based on 3-hour rolling average, and 220.9 tons/year as determined by EPA Test Method 10, 40 CFR 60, Appendix A.** |
| **Volatile Organic Compounds** | **3.5 ppmv at 15% $O_2$, not to exceed 8.97 lbs/hr both based on 3-hour rolling average, and 39.29 tons/year as determined by EPA Test Method 25, 40 CFR 60, Appendix A.** |
| **Opacity** | **10% as determined by EPA Test Method 9, 40 CFR 60, Appendix A.** |

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

## OPERATIONAL RESTRICTIONS

**The permittee shall not burn any fuel other than pipeline quality natural gas.**

**The permittee shall burn only fuel that contains less than 0.8% by weight fuel sulfur content per 40 CFR 60.333(b).**

**The permittee shall use the selective catalytic reduction (SCR) system during normal operation (above 60% load) of the combustion turbine for the control of NOx emissions.**

**The permittee shall limit $PM_{10}/PM_{2.5}$ emissions to less than 0.008 lb/MMBtu on a 3-hour average. This limit is the equivalent of 20.59 lb/hr.**

### *STARTUP AND SHUTDOWN PROVISIONS*

**The permitee shall comply with the short-term lbs/hr emissions limitations except during periods of startup, shutdowns, run backs, and tuning events. However, the permittee shall comply with the long-term tons/year emissions limitation during periods of startup, shutdown, run backs, and tuning events.**

**A startup event begins at the moment the startup sequence is initiated by the facility operator and fuel flow is initiated into the specific combustion turbine (CT) and ends with the attainment of the CT Lowest Sustainable Load (LSL). There are two (2) types of startup events: cold and other startups. Other startups include warm startups.**

**A cold startup is when the turbine has not been fired in the last 48 hours. A warm startup is when the turbine has been fired within the previous 48 hours.**

**For periods of cold startup, the permittee shall limit the period of the turbine and HRSG startup to six (6) hours or less. For other startups, the permittee shall limit the period of the turbine and HRSG startup to four (4) hours or less.**

**A run back event begins at the moment a process critical alarm causes the specific CT to drop below the LSL. The permittee has 60 minutes to return to or above the LSL or initiate shutdown procedures.**

**A tuning event will normally occur because of required seasonal tuning, after a combustor change-out, after a major repair or maintenance to a combustor, or other similar maintenance circumstance. Tuning sessions are completed periodically to optimize combustion or emission reductions from the turbine. Tuning events must be performed in accordance with the manufacture's recommendations. During the tuning event, all reasonable steps to minimize levels of emissions that exceed the limits of this permit shall be taken. Tuning events shall be limited to six (6) hours or less.**

**A shutdown event begins at the moment the specific combustion turbine reduces load to the LSL during a normal shutdown sequence initiated by the facility operator and ends with the termination of fuel flow to the specific CT.**

**For periods of shutdown, the permittee shall limit the total shutdown time to three (3) hours or less.**

**Except for upsets, startups, shutdowns, run backs, tuning events, or emergencies, the permittee shall not operate a CT at less than the LSL.**

**The permittee shall not use emission rates during periods of startup, shutdown, run back, or tuning event in determining compliance with the 3-hour rolling average emission rates.**

## Part III
## OTHER REQUIREMENTS

1. **The combustion turbine (CT), a part of Emission Point AA-001, is subject and shall comply with all applicable requirements of the New Source Performance Standards, as described in 40 CFR 60, Subpart A-General Provisions, including Notifications and Recordkeeping as provided in 60.7, the Performance Test requirements as provided in 60.8, and the specific requirements outlined in 60.330, 40 CFR 60, Subpart GG-Standards of Performance for Stationary Gas Turbines.**

2. **The heat recovery steam generator (HGSG), a part of Emission Point AA-001, is subject to and shall comply with all applicable requirements of the New Source Performance Standards, as described in 40 CFR 60, Subpart Da-Standards of Performance for Electric Utility Steam Generating Units.**

3. **Emission Point AA-001, is subject to and shall comply with all applicable requirements of the Acid Rain Program Regulations as specified in 40 CFR 72-78.**

4. **The combustion turbine, a part of Emission Point AA-001, is subject to the National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines, 40 CFR 63, Subpart YYYY and the General Provisions in Subpart A.**

5. **The permittee shall maintain records of the occurrence and duration of any startup, shutdown, runback, or tuning event of the combustion turbine in its operation; any upset of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative. Such records shall include the time and date of such startups, shutdowns, run backs, and tuning events and confirmation that good air pollution control practices were followed.**

6. **The permittee shall establish the CT Lowest Sustainable Load (LSL) during the initial emissions testing required by Part III, Conditions 6 and 10. In accordance with Part I, Conditions 21, 22, and 23, the permittee shall use the selective catalytic reduction (SCR) system during normal operation (above the established LSL) of the combustion turbine for the control of NOx emissions. The LSL will be defined as a percent of maximum CT operating load in the Permit to Operate. The LSL is currently defined as 60% load.**

7. **The permittee shall demonstrate compliance with particulate matter ($PM/PM_{10}/PM_{2.5}$) emission limitations by stack testing in accordance with EPA Reference Methods 1-5, in conjunction with Test Method 202 and the requirements of the New Source Performance Standards for turbines and/or electric utility steam generating units or their approved equivalents within 180 days of startup but no later than 60 days of attaining maximum production and biennially thereafter. The permittee shall submit a test report of the results of the stack tests. Submit a written test protocol at least**

**thirty (30) days prior to the intended test date(s) to ensure that all test methods and procedures are acceptable and notify the DEQ in writing at least ten (10) days prior to the intended test date(s) so that an observer may be afforded the opportunity to witness the test.**

8. **The permittee shall demonstrate compliance with nitrogen oxides (NOx), and carbon monoxide (CO) emission limitations using CEMS. Demonstrating compliance with $NO_X$ and CO limits using CEMs data in lieu of EPA Reference Methods is an acceptable practice provided that the permittee meets the guidelines established in EPA's general guidance on "Alternative Testing and Monitoring Procedures for Combustion Turbines Regulated under New Source Performance Standards". This includes use of reference method test data collected during the Relative Accuracy Test Audits (RATA) required under 40 CFR 75. The permittee shall use Part 75 CEMS data substitution provisions for CEMS when determining compliance with CO and NOx limitations.**

9. **The permittee shall install, calibrate, maintain and operate continuous monitoring systems for $NO_X$ (as specified in 40 CFR 60.334, Appendix B and 40 CFR 75). The 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 60.7 and 40 CFR 75.**

   **The permittee shall install, calibrate, maintain and operate continuous monitoring systems for CO (as specified in 40 CFR 60, Appendix B and Appendix F). The CGA, RA Audits shall be conducted according to 40 CFR 60, Appendix B and F. However, the frequency of the audit shall be as specified in 40 CFR 75, Appendix B, Section 2.2. The RATA required under 40 CFR 60, Appendix F, shall be at the frequency specified in 40 CFR 75, Appendix B, Section 2.3.1 and is as follows:**

   **A calendar quarter that does not qualify as QA operating quarter shall be excluded in determining the deadline for the next RATA. No more than eight successive calendar quarters shall elapse after the quarter in which a RATA was last performed without a subsequent RATA having been conducted. If the RATA has not been completed by the end of the eighth calendar quarter since the quarter of the last RATA, then the RATA must be completed within a 720 unit (or stack) operating hour grace period following the end of the eighth successive elapsed calendar quarter. For the diluent monitors RATA may be performed annually (i.e., once every four successive QA operating quarters, rather than once every two successive QA operating quarters.**

10. **For Emission Point AA-001, permittee shall monitor quantity of fuel burned. For the firing of natural gas, as allowed by 40 CFR 60.334(h)(3), the permittee shall not be required to monitor the total sulfur content of the gaseous fuel combusted in the turbines if the gaseous fuel is demonstrated to meet the definition of natural gas in Sec.**

**60.331(u). The permittee shall use one of the following sources of information to make the required demonstration:**

**a) The quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less; or**

**b) Representative fuel sampling data which show that the sulfur content of the gaseous fuel does not exceed 20 grains/100 scf. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of appendix D to part 75 of this chapter is required.**

**11. The permittee shall demonstrate compliance with NOx and CO, emission limitations by stack testing in accordance with EPA Reference Test Methods 7, and 10 respectively and the requirements of the New Source Performance Standards for turbines and/or electric utility steam generating units or their approved equivalents within 180 days of startup, but no later than 60 days of attaining maximum production. The permittee shall submit a test report of the results of the stack tests. Submit a written test protocol at least thirty (30) days prior to the intended test date(s) to ensure that all test methods and procedures are acceptable and notify the DEQ in writing at least ten (10) days prior to the intended test date(s) so that an observer may be afforded the opportunity to witness the test.**

**12. Emission Point AA-001, is subject to and shall comply with all applicable requirements of the Cross-State Air Pollution Rule (CPSAR), 40 CFR 52,78, 97.**