NEW SOURCE CONSTRUCTION PERMIT
and MINOR SOURCE OPERATING PERMIT
OFFICE OF AIR QUALITY

PSEG Morristown Energy Company LLC
Morristown Industrial Park
Morristown, Indiana 46161

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this permit.

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, (326 IAC 2-5.1 if new source), 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

Operation Permit No.: MSOP 145-12004-00058	
Original signed by Paul Dubenetzky Issued by: Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: July 17, 2001

TABLE OF CONTENTS

SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-5.1-3(c)] [326 IAC 2-6.1-4(a)]

The Permittee owns and operates a natural gas fired merchant electric generating station.

Authorized Individual:	Benjamin H. Sission
Source Address:	Morristown Industrial Park, Morristown, Indiana 46161
Mailing Address:	PSEG Power LLC, 80 Park Plaza, Newark, NJ 07102-4194
Phone Number:	(973) 430-7597
SIC Code:	4911
County Location:	Shelby
County Status:	Attainment for all criteria pollutants
Source Status:	Minor Source, under PSD or Emission Offset Rules; Minor Source, Section 112 of the Clean Air Act

A.2 Emissions units and Pollution Control Equipment Summary

This stationary source is approved to construct and operate the following emissions units and pollution control devices:

Base Case

(a) Four (4) natural gas fired combustion turbine generators, designated as units SC-1, SC-2, SC-3, SC-4, with a maximum heat input capacity of 932.5 MMBtu/hr (per unit), and exhausting to stacks designated as 1, 2, 3, 4, respectively. Dry low NO_X combustors will be used to control nitrogen oxide emissions.

Or

Alternate case

(a) Two (2) natural gas fired combustion turbine generators, designated as units SC-1 and SC-2, with a maximum heat input capacity of 1694.2 MMBtu/hr (per unit), and exhausting to stacks designated as 1A and 2A. Dry low NO_X combustors will be used to control nitrogen oxide emissions.

And

(b) One (1) emergency diesel generator, designated as unit 5, with a maximum heat input capacity of 9.8 MMBtu/hr, and exhausting to the stack designated as 5.

(c) One (1) diesel fire pump, designated as unit 6, with a maximum heat input capacity of 2.1 MMBtu/hr, and exhausting to the stack designated as 6.

A.3 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

(a) It is a major source, as defined in 326 IAC 2-7-1(22);

(b) It is an affected source under Title IV (Acid Deposition Control) of the Clean Air Act, as defined in 326 IAC 2-7-1(3);

(c) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

A.4 Acid Rain Permit Applicability [40 CFR Part 72.30]

This stationary source shall be required to have a Phase II, Acid Rain permit by 40 CFR Part 72.30 (Applicability) because:

(a) The combustion turbines are new units under 40 CFR Part 72.6.

(b) The source cannot operate the combustion units until the Phase II, Acid Rain permit has been issued.

SECTION B GENERAL CONSTRUCTION CONDITIONS

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1.1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

B.1 Permit No Defense [IC 13]

This permit to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

B.2 Definitions

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, any applicable definitions found in IC 13-11, 326 IAC 1-2, and 326 IAC 2-1.1-1 shall prevail.

B.3 Effective Date of the Permit [IC 13-15-5-3]

Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

B.4 Revocation of Permits [326 IAC 2-1.1-9(5)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

B.5 Modification to Permit [326 IAC 2]

Notwithstanding the Section B condition entitled “Minor Source Operating Permit”, all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

B.6 Minor Source Operating Permit [326 IAC 2-6.1]

This document shall also become a minor source operating permit pursuant to 326 IAC 2-6.1 when, prior to start of operation, the following requirements are met:

(a) The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), Permit Administration & Development Section:

(1) If the Affidavit of Construction verifies that the facilities covered in this Construction Permit were constructed as proposed in the application, then the facilities may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.

(2) If the Affidavit of Construction does not verify that the facilities covered in this Construction Permit were constructed as proposed in the application, then the Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section prior to beginning operation of the facilities.

(b) If construction is completed in phases; i.e., the entire construction is not done

continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.

(c) Upon receipt of the Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section, the Permittee shall attach it to this document.

(d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-7-19 (Fees).

(e) Pursuant to 326 IAC 2-7-4(a)(1)(A)(ii) and 326 IAC 2-5.1-4, the Permittee shall apply for a Title V operating permit within twelve (12) months of the date on which the source first meets an applicability criterion of 326 IAC 2-7-2.

B.7 NSPS Reporting Requirement

Pursuant to the New Source Performance Standards (NSPS), Part 60, Subpart GG, the source owner/operator is hereby advised of the requirement to report the following at the appropriate times:

(a) Commencement of construction date (no later than 30 days after such date);

(b) Anticipated start-up date (not more than 60 days or less than 30 days prior to such date);

(c) Actual start-up date (within 15 days after such date); and

(d) Date of performance testing (at least 30 days prior to such date), when required by a condition elsewhere in this permit.

Reports are to be sent to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, IN 46206-6015

The application and enforcement of these standards have been delegated to the IDEM, OAQ. The requirements of 40 CFR Part 60 are also federally enforceable.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

C.1 PSD Minor Source Status [326 IAC 2-2] [40 CFR 52.21]

(a) The total source potential to emit NO_X, CO, VOC, SO_2, PM, and PM_{10} is limited to less than 250 tons per year. Therefore, the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 will not apply.

(b) Any change or modification which may increase the potential to emit more than 250 tons per year from this source, may cause this source to be considered a major source under PSD, 326 IAC 2-2 and 40 CFR 52.21, and shall require the approval from IDEM, OAQ prior to making this change.

C.2 Preventive Maintenance Plan [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) after issuance of this permit, including the following information on each emissions unit:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions;

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

(b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that failure to implement the Preventive Maintenance Plan does not cause or contribute to a violation of any limitation on emissions or potential to emit.

(c) PMP's shall be submitted to IDEM, OAQ upon request and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its Preventive Maintenance Plan whenever lack of proper maintenance causes or contributes to any violation.

C.3 Source Modification [326 IAC 2-7-10.5]

(a) The Permittee must comply with the requirements of 326 IAC 2-7-10.5 whenever the Permittee seeks to construct new emissions units, modify existing emissions units, or otherwise modify the source.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015

Indianapolis, Indiana 46206-6015

Any such application should be certified by the "responsible official" as defined by 326 IAC 2-7-1(34) only if a certification is required by the terms of the applicable rule.

C.4 Inspection and Entry [326 IAC 2-5.1-3(e)(4)(B)] [326 IAC 2-6.1-5(a)(4)]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, and U.S. EPA, or an authorized representative to perform the following:

(a) Enter upon the Permittee's premises where a permitted 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 this title or the conditions of this permit or any operating permit revisions;

(c) Inspect, at reasonable times, any processes, emissions units (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit or any operating permit revisions;

(d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) Utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

C.5 Transfer of Ownership or Operation [326 IAC 2-6.1-6(d)(3)]

Pursuant to [326 IAC 2-6.1-6(d)(3)]:

(a) In the event that ownership of this source is changed, the Permittee shall notify IDEM, OAQ, Permits Branch, within thirty (30) days of the change.

(b) The written notification shall be sufficient to transfer the permit to the new owner by a notice-only change pursuant to 326 IAC 2-6.1-6(d)(3).

(c) IDEM, OAQ shall issue a revised permit.

The notification which shall be submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

C.6 Permit Revocation [326 IAC 2-1-9]

Pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:

(a) Violation of any conditions of this permit.

(b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.

(c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.

(d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.

(e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

C.7 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.8 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.9 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted by using good engineering practices (GEP) pursuant to 326 IAC 1-7-3.

Testing Requirements

C.10 Performance Testing [326 IAC 3-6]

(a) Compliance testing on new emissions units shall be conducted within 60 days after achieving maximum production rate, but no later than180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality

100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two weeks prior to the test date.

(b) All test reports must be received by IDEM, OAQ within forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

The documentation submitted by the Permittee does not require certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

Compliance Monitoring Requirements

C.11 Compliance Monitoring [326 IAC 2-1.1-11]

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when operation begins.

C.12 Maintenance of Monitoring Equipment [IC 13-14-1-13]

(a) In the event that a breakdown of the monitoring equipment occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem. To the extent practicable, supplemental or intermittent monitoring of the parameter should be implemented at intervals no less frequent than required in Section D of this permit until such time as the monitoring equipment is back in operation. In the case of continuous monitoring, supplemental or intermittent monitoring of the parameter should be implemented at intervals no less than one (1) hour (this time frame is determined on a case by case basis) until such time as the continuous monitor is back in operation.

(b) The Permittee shall install, calibrate, quality assure, maintain, and operate all necessary monitors and related equipment. In addition, prompt corrective action shall be initiated whenever indicated.

C.13 Monitoring Methods [326 IAC 3]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, or other approved methods as specified in this permit.

C.14 Compliance Monitoring Plan - Failure to Take Response Steps [326 IAC 1-6]

(a) The Permittee is required to implement a compliance monitoring plan to ensure that reasonable information is available to evaluate its continuous compliance with applicable requirements. This compliance monitoring plan is comprised of:

(1) This condition;

(2) The Compliance Determination Requirements in Section D of this permit;

(3) The Compliance Monitoring Requirements in Section D of this permit;

(4) The Record Keeping and Reporting Requirements in Section C (Monitoring Data Availability, General Record Keeping Requirements, and General Reporting Requirements) and in Section D of this permit; and

(5) A Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. CRP's shall be submitted to IDEM, OAQ upon request and shall be subject to review and approval by IDEM, OAQ. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee and maintained on site, and is comprised of :

(A) Response steps that will be implemented in the event that compliance related information indicates that a response step is needed pursuant to the requirements of Section D of this permit; and

(B) A time schedule for taking such response steps including a schedule for devising additional response steps for situations that may not have been predicted.

(b) For each compliance monitoring condition of this permit, appropriate response steps shall be taken when indicated by the provisions of that compliance monitoring condition. Failure to perform the actions detailed in the compliance monitoring conditions or failure to take the response steps within the time prescribed in the Compliance Response Plan, shall constitute a violation of the permit unless taking the response steps set forth in the Compliance Response Plan would be unreasonable.

(c) After investigating the reason for the excursion, the Permittee is excused from taking further response steps for any of the following reasons:

(1) The monitoring equipment malfunctioned, giving a false reading. This shall be an excuse from taking further response steps providing that prompt action was taken to correct the monitoring equipment.

(2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for an administrative amendment to the permit, and such request has not been denied or;

(3) An automatic measurement was taken when the process was not operating; or

(4) The process has already returned to operating within "normal" parameters and no response steps are required.

(d) Records shall be kept of all instances in which the compliance related information was not met and of all response steps taken.

C.15 Actions Related to Noncompliance Demonstrated by a Stack Test

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate corrective actions. The Permittee shall submit a description of these corrective actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize emissions from the affected emissions unit while the corrective actions are being implemented. IDEM, OAQ shall notify the Permittee within thirty (30) days, if the corrective actions taken are deficient. The Permittee shall submit a description of additional corrective actions taken to IDEM, OAQ within thirty (30) days of receipt of the notice of deficiency. IDEM, OAQ reserves the authority to use enforcement activities to resolve noncompliant stack tests.

(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline. Failure of the second test to demonstrate compliance with the appropriate permit conditions may be grounds for immediate revocation of the permit to operate the affected emissions unit.

The documents submitted pursuant to this condition do not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

Record Keeping and Reporting Requirements

C.16 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

(a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.

(b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.

(c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).

(d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.17 Annual Emission Statement [326 IAC 2-6]

(a) The Permittee shall submit an annual emission statement certified pursuant to the requirements of 326 IAC 2-6, that must be received by July 1 of each year and must

comply with the minimum requirements specified in 326 IAC 2-6-4. The annual emission statement shall meet the following requirements:

(1) Indicate actual emissions of criteria pollutants from the source, in compliance with 326 IAC 2-6 (Emission Reporting);

(2) Indicate actual emissions of other regulated pollutants from the source, for purposes of Part 70 fee assessment.

(b) The annual emission statement covers the twelve (12) consecutive month time period starting January 1 and ending December 31. The annual emission statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

(c) The annual emission statement required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

The submittal by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

C.18 Monitoring Data Availability [326 IAC 2-6.1-2] [IC 13-14-1-13]

(a) With the exception of performance tests conducted in accordance with Section C-Performance Testing, all observations, sampling, maintenance procedures, and record keeping, required as a condition of this permit shall be performed at all times the equipment is operating at normal representative conditions.

(b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this permit is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this permit.

(c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.

(d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.

(e) At its discretion, IDEM may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.

(f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.

C.19 General Record Keeping Requirements [326 IAC 2-6.1-2]

(a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years and available upon the request of an IDEM, OAQ representative. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a written request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Records of required monitoring information shall include, where applicable:

(1) The date, place, and time of sampling or measurements;

(2) The dates analyses were performed;

(3) The company or entity performing the analyses;

(4) The analytic techniques or methods used;

(5) The results of such analyses; and

(6) The operating conditions existing at the time of sampling or measurement.

(c) Support information shall include, where applicable:

(1) Copies of all reports required by this permit;

(2) All original strip chart recordings for continuous monitoring instrumentation;

(3) All calibration and maintenance records;

(4) Records of preventive maintenance shall be sufficient to demonstrate that failure to implement the Preventive Maintenance Plan did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures. Records of response steps taken shall indicate whether the response steps were performed in accordance with the Compliance Response Plan required by Section C - Compliance Monitoring Plan - Failure to take Response Steps, of this permit, and whether a deviation from a permit condition was reported. All records shall briefly describe what maintenance and response steps were taken and indicate who performed the tasks.

(d) All record keeping requirements not already legally required shall be implemented when operation begins.

C.20 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

(a) To affirm that the source has met all the compliance monitoring requirements stated in this permit the source shall submit a Quarterly Compliance Monitoring Report. Any deviation from the requirements and the date(s) of each deviation must be reported. The Compliance Monitoring Report shall include the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

(c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(d) Unless otherwise specified in this permit, any quarterly report shall be submitted within thirty (30) days of the end of the reporting period. The reports require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(e) All instances of deviations must be clearly identified in such reports. A reportable deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit or a rule. It does not include:

(1) An excursion from compliance monitoring parameters as identified in Section D of this permit unless tied to an applicable rule or limit; or

(2) A malfunction as described in 326 IAC 1-6-2; or

(3) Failure to implement elements of the Preventive Maintenance Plan unless lack of maintenance has caused or contributed to a deviation.

(4) Failure to make or record information required by the compliance monitoring provisions of Section D unless such failure exceeds 5% of the required data in any calendar quarter.

(5) A Permittee's failure to take the appropriate response step when an excursion of a compliance monitoring parameter has occurred or failure to monitor or record the required compliance monitoring is a deviation.

(f) Any corrective actions or response steps taken as a result of each deviation must be clearly identified in such reports.

(g) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period.

C.21 Annual Notification [326 IAC 2-6.1-5(a)(5)]

(a) Annual notification shall be submitted to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.

(b) Noncompliance with any condition must be specifically identified. If there are any permit conditions or requirements for which the source is not in compliance at any time during the year, the Permittee must provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be, achieved. The notification must be signed by an authorized individual.

(c) The annual notice shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in the format attached no later than March 1 of each year to:

Compliance Data Section, Office of Air Quality
Indiana Department of Environmental Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015

(d) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

SECTION D.1 FACILITY CONDITIONS – Simple Cycle Operation (Base Case)

(a) Four (4) natural gas fired combustion turbine generators, designated as units SC-1, SC-2, SC-3, SC-4, with a maximum heat input capacity of 932.5 MMBtu/hr (per unit), and exhausting to stacks designated as 1, 2, 3, 4, respectively. Dry low NO_X combustors will be used to control nitrogen oxide emissions.

(b) One (1) emergency diesel generator, designated as unit 5, with a maximum heat input capacity of 9.8 MMBtu/hr, and exhausting to the stack designated as 5.

(c) One (1) diesel fire pump, designated as unit 6, with a maximum heat input capacity of 2.1 MMBtu/hr, and exhausting to the stack designated as 6.

(The information describing the process contained in this facility description box is descriptive information, and does not constitute enforceable conditions.)

Emissions Limitations and Standards

D.1.1 Operating Scenario

If the Permittee elects to construct and operate under this Section D.1 Simple Cycle Operation (Base Case), then Section D.2 Simple Cycle Operation (Alternate Case) becomes invalid.

D.1.2 PSD Minor Limit [326 IAC 2-2][40 CFR 52.21]

The potential to emit of CO from the four (4) combustion turbines (including startup and shutdown), emergency generator, and diesel fire pump shall be limited to less than 250 tons per year per twelve (12) consecutive month period per pollutant, rolled on a monthly basis. Therefore, Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, will not apply. By limiting CO emissions to less than 250 tons per year, the NO_X, SO_2, VOC, PM, and PM_{10} emissions are also less than 250 tons per year.

D.1.3 40 CFR Part 60, Subpart GG Applicability (Stationary Gas Turbines)

(a) The four (4) base case combustion turbines are subject to 40 CFR Part 60, Subpart GG because the heat input at peak load is equal to or greater than 10.7 gigajoules per hour, based on the lower heating value of the fuel fired.

(b) Pursuant to 326 IAC 12-1 and 40 CFR 60, Subpart GG (Stationary Gas Turbines), the owner or operator shall:

(1) Limit nitrogen oxide emissions, as required by 40 CFR 60.332, to:

$$STD = 0.0075 \frac{(14.4)}{Y} + F ,$$

where STD = allowable NO_X emissions (percent by volume at 15 percent oxygen on a dry basis).

Y = manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value

of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_X emission allowance for fuel-bound nitrogen as defined in paragraph (a)(3) of 40 CFR 60.332.

(2) Limit sulfur dioxide emissions, as required by 40 CFR 60.333, to 0.015 percent by volume at 15 percent oxygen on a dry basis, or use natural gas fuel with a sulfur content less than or equal to 0.8 percent by weight;

D.1.4 326 IAC 2-4.1-1 (New Source Toxics Control)

The formaldehyde emission rate from each stack shall not exceed 0.000714 lb/MMBtu. This emission rate in combination with the emission limitation specified in D.1.1 shall ensure that a single HAP emission will not exceed 10 tons per year and that any combination of HAPs will not exceed 25 tons per year.

(a) The formaldehyde emissions shall be less than ten (10) tons per twelve (12) consecutive month period, rolled on a monthly basis.

(b) The combination of HAPs emissions shall be less than twenty-five (25) tons per twelve (12) consecutive month period, rolled on a monthly basis.

Compliance Determination Requirements

D.1.5 Monitoring Requirements

(a) Pursuant to 326 IAC 3-5-1(d), the Permittee shall install, calibrate, operate, and maintain a continuous emission monitoring system for CO to demonstrate compliance with Condition D.1.1

(b) The CO emissions during startup and shutdown periods shall also be monitored by continuous emissions monitors and included in the less than 250 ton per year limit to remain a minor source.

D.1.6 Testing Requirements [326 IAC 2-1.1-5] [40 CFR Part 60.8] [326 IAC 3-5]

(a) Pursuant to 326 IAC 3-5, the Permittee shall conduct a performance test, no later than one-hundred and eighty days (180) after the facility startup or monitor installation, on the combustion turbine exhaust stacks (designated as 1 – 4) in order to certify the continuous emission monitoring system for CO.

(b) Within sixty (60) days after achieving maximum production rate, but no later than one-hundred and eighty (180) days after initial start-up, the Permittee shall conduct NO_X and SO_2 stack tests for each turbine utilizing methods as approved by the Commissioner. These tests shall be performed in accordance with 40 CFR Part 60.335 and Section C – Performance Testing, in order to document compliance with Condition D.1.2.

(c) Within one-hundred eighty days (180) after initial start-up, the Permittee shall perform formaldehyde stack tests for each turbine (stacks designated as 1 – 4) utilizing methods approved by the Commissioner when operating at loads of 50%, 75%, and 100%. This test shall be performed in accordance with Section C – Performance Testing, in order to verify the emission rate in Condition D.1.3.

(d) IDEM may require compliance testing at any specific time when necessary to determine if the source is in compliance. If testing is required by IDEM, compliance shall be determined by a performance test conducted in accordance with Section C – Performance Testing.

Compliance Monitoring Requirements

D.1.7 40 CFR, Subpart GG Compliance Requirements (Stationary Gas Turbines)

Pursuant to 40 CFR Part 60, Subpart GG (Stationary Gas Turbines), the Permittee shall monitor the nitrogen and sulfur content of the natural gas on a daily basis as follows:

(a) Determine compliance with the nitrogen oxide and sulfur dioxide standards in 40 CFR 60.332 and 60.333(a), per requirements described in 40 CFR 60.335(c);

(b) Determine the sulfur content of the natural gas being fired in the turbine by ASTM Methods D 1072-80, D 3030-81, D 4084-82, or D 3246-81. The applicable ranges of some ASTM methods mentioned are not adequate to measure the levels of sulfur in some fuel gases. Dilution of samples before analysis (with verification of the dilution ratio) may be used, subject to the approval of the Administrator; and

(c) Determine the nitrogen content of the natural gas being fired in the turbine by using analytical methods and procedures that are accurate to within 5 percent and are approved by the Administrator.

The analyses required above may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor or any other qualified agency.

Pursuant to 60.334(b), owners, operators or fuel vendors may develop custom fuel schedules for determination of the nitrogen and sulfur content based on the design and operation of the affected facility and the characteristics of the fuel supply. These schedules shall be substantiated with data and must be approved by the Administrator before they can be used to comply with the above requirements.

D.1.8 Continuous Emission Monitoring

(a) The owner or operator of a new source with an emission limitation or permit requirement established under 326 IAC 2-5.1-3 and 326 IAC 2-2, shall be required to install a continuous emissions monitoring system or alternative monitoring plan as allowed under the Clean Air Act and 326 IAC 3-5-1(d).

(b) The Permittee shall install, calibrate, certify, operate and maintain a continuous emission monitoring system for CO, for the turbine exhaust stacks (designated as 1-4) in accordance with 326 IAC 3-5-2 and 3-5-3.

(1) The continuous emission monitoring system (CEMS) shall measure CO emissions rates in pounds per hour and parts per million (ppmvd) corrected to 15 percent O_2. The use of CEMS to measure and record the CO emission rates, is sufficient to demonstrate compliance with the limitations established in Condition D.1.1.

(2) The Permittee shall submit to IDEM, OAQ, within ninety (90) days after monitor

installation, a complete written continuous monitoring standard operating procedure (SOP), in accordance with the requirements of 326 IAC 3-5-4.

(3) The Permittee shall record the output of the system and shall perform the required record keeping, pursuant to 326 IAC 3-5-6, and reporting, pursuant to 326 IAC 3-5-7.

Record Keeping and Reporting Requirements

D.1.9 Record Keeping Requirements

(a) To document compliance with Condition D.1.1 and D.1.3, the Permittee shall maintain records of the following:

(1) Amount of natural gas combusted (in MMscf) per turbine during each month; and

(2) The heat input capacity of each unit.

(3) The percent sulfur content of the natural gas (if other than pipeline quality natural gas which is defined as natural gas that is provided by a supplier through a pipeline; 40 CFR 72.2).

(4) The emission rate of CO in pounds per hour (based on CEMS data).

(5) The Permittee shall maintain records required under 326 IAC 3-5-6 at the source in a manner so that they may be inspected by the IDEM, OAQ, or the U.S. EPA, if so requested or required.

(b) To document compliance with D.1.2, the source shall maintain records of the natural gas analyses, including sulfur content and nitrogen content of the gas, for a period of three (3) years.

(c) All records shall be maintained in accordance with Section C – General Reporting Requirements, of this permit.

D.1.10 Reporting Requirements

(a) The Permittee shall submit a quarterly excess emissions report, if applicable, based on the continuous emissions monitoring data or approved alternative monitoring plan for NO_X and continuous emissions monitoring data for CO, pursuant to 326 IAC 3-5-7. These reports shall be submitted within thirty (30) calendar days following the end of each calendar quarter and in accordance with Section C – General Reporting Requirements, of this permit.

(b) A quarterly summary of the information to document compliance with D.1.1, D.1.3, and D.1.8 shall be submitted to the address listed in Section C – General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.

(c) The Permittee shall report periods of excess emissions, as required by 40 CFR 60.334(c).

(d) These reports shall be submitted within thirty (30) calendar days following the end of each calendar quarter and shall be in accordance with Section C – General Reporting Requirements, of this permit.

SECTION D.2 FACILITY CONDITIONS – Simple Cycle Operation (Alternate Case)

(a) Two (2) natural gas fired combustion turbine generators, designated as units SC-1 and SC-2, with a maximum heat input capacity of 1,694.2 MMBtu/hr (per unit), and exhausting to stacks designated as 1A and 2A. Dry low NO_X combustors will be used to control nitrogen oxide emissions.

(b) One (1) emergency diesel generator, designated as unit 5, with a maximum heat input capacity of 9.8 MMBtu/hr, and exhausting to the stack designated as 5.

(c) One (1) diesel fire pump, designated as unit 6, with a maximum heat input capacity of 2.1 MMBtu/hr, and exhausting to the stack designated as 6.

(The information describing the process contained in this facility description box is descriptive information, and does not constitute enforceable conditions.)

Emissions Limitations and Standards

D.2.1 Operating Scenario

If the Permittee elects to operate under this Section, D.2 Simple Cycle Operation (Alternate Case), then Section D.1 Simple Cycle Operation (Base Case) becomes invalid.

D.2.2 PSD Minor Limit [326 IAC 2-2][40 CFR 52.21]

The potential to emit of NO_X from the two (2) combustion turbines, emergency generator, and diesel fire pump shall be limited to less than 250 tons per year per twelve (12) consecutive month period per pollutant, rolled on a monthly basis. Therefore, Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, will not apply. By limiting NO_X emissions to less than 250 tons per year, the CO, SO_2, VOC, PM, and PM_{10} emissions are also less than 250 tons per year.

D.2.3 40 CFR Part 60, Subpart GG Applicability (Stationary Gas Turbines)

(a) The two (2) combustion turbines are subject to 40 CFR Part 60, Subpart GG because the heat input at peak load is equal to or greater than 10.7 gigajoules per hour, based on the lower heating value of the fuel fired.

(b) Pursuant to 326 IAC 12-1 and 40 CFR 60, Subpart GG (Stationary Gas Turbines), the owner or operator shall:

(1) Limit nitrogen oxide emissions, as required by 40 CFR 60.332, to:

$$STD = 0.0075 \frac{(14.4)}{Y} + F ,$$

where STD = allowable NO_X emissions (percent by volume at 15 percent oxygen on a dry basis).

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

F = NO_X emission allowance for fuel-bound nitrogen as defined in paragraph (a)(3) of 40 CFR 60.332.

(2) Limit sulfur dioxide emissions, as required by 40 CFR 60.333, to 0.015 percent by volume at 15 percent oxygen on a dry basis, or use natural gas fuel with a sulfur content less than or equal to 0.8 percent by weight;

D.2.4 326 IAC 2-4.1-1 (New Source Toxics Control)

The formaldehyde emission rate from each stack shall not exceed 0.000714 lb/MMBtu. This emission rate in combination with the emission limitation specified in D.2.1 shall ensure that a single HAP emission will not exceed 10 tons per year and that any combination of HAPs will not exceed 25 tons per year.

(a) The formaldehyde emissions shall be less than ten (10) tons per twelve (12) consecutive month period, rolled on a monthly basis.

(b) The combination of HAPs emissions shall be less than twenty-five (25) tons per twelve (12) consecutive month period, rolled on a monthly basis.

Compliance Determination Requirements

D.2.5 Monitoring Requirements

(a) Pursuant to 326 IAC 3-5-1(d), the Permittee shall install, calibrate, certify, operate and maintain a continuous emission monitoring system or submit an alternative monitoring plan for NO_X, in order to determine compliance with Condition D.2.1.

(b) To qualify for an alternate monitoring plan each combustion turbine must not exceed a capacity factor of 20 percent in any calendar year or exceed a capacity factor of 10 percent averaged over three years as indicated in 40 CFR 75.12. However, if the capacity factor in subsequent years exceeds 20 percent in any calendar year or exceeds a capacity factor of 10 percent averaged over three years, the Permittee shall install, certify, and operate a continuous emission monitoring system.

(c) The NO_X emissions during startup and shutdown periods shall also be monitored by continuous emissions monitors or an alternative monitoring plan, and included in the less than 250 ton per year limit to remain a minor source.

D.2.6 Testing Requirements [326 IAC 2-1.1-5] [40 CFR Part 60.8] [326 IAC 3-5]

(a) Pursuant to 326 IAC 3-5, the Permittee shall conduct a performance test, not later than one-hundred and eighty days (180) after the facility startup or monitor installation, on the combustion turbine exhaust stacks (designated 1A and 2A) in order to certify the continuous emission monitoring system, or the alternative monitoring plan for NO_X.

(b) Within sixty (60) days after achieving maximum production rate, but no later than one-hundred and eighty (180) days after initial start-up, the Permittee shall conduct NO_X and SO_2 stack tests for each turbine utilizing methods as approved by the Commissioner. These tests shall be performed in accordance with 40 CFR Part 60.335 and Section C – Performance

Testing, in order to document compliance with Conditions D.2.2.

(c) Within one-hundred eighty days (180) after initial start-up, the Permittee shall perform formaldehyde stack tests for each turbine (stack designated as 1A and 2A) utilizing methods approved by the Commissioner when operating at loads of 50%, 75%, and 100%. This test shall be performed in accordance with Section C – Performance Testing, in order to verify the emission rate in Condition D.2.3.

(d) IDEM may require compliance testing at any specific time when necessary to determine if the source is in compliance. If testing is required by IDEM, compliance with the NO_X and CO limits specified in Condition D.2.1, shall be determined by a performance test conducted in accordance with Section C – Performance Testing.

Compliance Monitoring Requirements

D.2.7 40 CFR, Subpart GG Compliance Requirements (Stationary Gas Turbines)

Pursuant to 40 CFR Part 60, Subpart GG (Stationary Gas Turbines), the Permittee shall monitor the nitrogen and sulfur content of the natural gas on a daily basis as follows:

(a) Determine compliance with the nitrogen oxide and sulfur dioxide standards in 40 CFR 60.332 and 60.333(a), per requirements described in 40 CFR 60.335(c);

(b) Determine the sulfur content of the natural gas being fired in the turbine by ASTM Methods D 1072-80, D 3030-81, D 4084-82, or D 3246-81. The applicable ranges of some ASTM methods mentioned are not adequate to measure the levels of sulfur in some fuel gases. Dilution of samples before analysis (with verification of the dilution ratio) may be used, subject to the approval of the Administrator; and

(c) Determine the nitrogen content of the natural gas being fired in the turbine by using analytical methods and procedures that are accurate to within 5 percent and are approved by the Administrator.

The analyses required above may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor or any other qualified agency.

Pursuant to 60.334(b), owners, operators or fuel vendors may develop custom fuel schedules for determination of the nitrogen and sulfur content based on the design and operation of the affected facility and the characteristics of the fuel supply. These schedules shall be substantiated with data and must be approved by the Administrator before they can be used to comply with the above requirements.

D.2.8 Continuous Emission Monitoring

(a) The owner or operator of a new source with an emission limitation or permit requirement established under 326 IAC 2-5.1-3 and 326 IAC 2-2, shall be required to install a continuous emissions monitoring system or alternative monitoring plan as allowed under the Clean Air Act and 326 IAC 3-5-1(d).

(b) If the Permittee elects to install a continuous emission monitoring system for NO_X for stacks designated as 1A and 2A or was not able to comply with Condition D.2.5(b), in accordance with 326 IAC 3-5-2 and 3-5-3, the Permittee shall comply with the following requirements:

(1) The continuous emission monitoring system (CEMS) shall measure NO_X emission rates in pounds per hour and parts per million (ppmvd) corrected to 15 percent O_2. The use of CEMS to measure and record the NO_X emission rates, is sufficient to demonstrate compliance with the limitations established in Condition D.2.1.

(2) The Permittee shall submit to IDEM, OAQ, within ninety (90) days after monitor installation, a complete written continuous monitoring standard operating procedure (SOP), in accordance with the requirements of 326 IAC 3-5-4.

(3) The Permittee shall record the output of the system and shall perform the required record keeping, pursuant to 326 IAC 3-5-6, and reporting, pursuant to 326 IAC 3-5-7.

(c) If the Permittee can comply with Condition D.2.5(b) and elects to submit an alternative monitoring plan for NO_X for the combustion turbine stacks designated as 1A and 2A, the plan must be approved by IDEM, OAQ before operation can commence. The alternative monitoring plan shall contain at a minimum the requirements indicated in 40 CFR 75 Subpart E.

Record Keeping and Reporting Requirements

D.2.9 Record Keeping Requirements

(a) To document compliance with Condition D.2.1 and D.2.3, the Permittee shall maintain records of the following:

(1) Amount of natural gas combusted (in MMscf) per turbine during each month; and

(2) The heat input capacity of each unit.

(3) The percent sulfur content of the natural gas (if other than pipeline quality natural gas which is defined as natural gas that is provided by a supplier through a pipeline; 40 CFR 72.2).

(4) The emission rates of NO_X in pounds per hour.

(5) The Permittee shall maintain records required under 326 IAC 3-5-6 at the source in a manner so that they may be inspected by the IDEM, OAQ, or the U.S. EPA, if so requested or required.

(b) To document compliance with D.2.2, the source shall maintain records of the natural gas analyses, including sulfur content and nitrogen content of the gas, for a period of three (3) years.

(c) All records shall be maintained in accordance with Section C – General Reporting Requirements, of this permit.

D.2.10 Reporting Requirements

(a) The Permittee shall submit a quarterly excess emissions report, if applicable, based on the continuous emissions monitoring data or alternative monitoring plan for NO_X, pursuant to 326 IAC 3-5-7. These reports shall be submitted within thirty (30) calendar days following the end

of each calendar quarter and in accordance with Section C – General Reporting Requirements, of this permit.

(b) A quarterly summary of the information to document compliance with D.2.1, D.2.3, and D.2.8 shall be submitted to the address listed in Section C – General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.

(c) The Permittee shall report periods of excess emissions, as required by 40 CFR 60.334(c).

(d) These reports shall be submitted within thirty (30) calendar days following the end of each calendar quarter and shall be in accordance with Section C – General Reporting Requirements, of this permit.

Indiana Department of Environmental Management
Office of Air Quality
Compliance Data Section

Quarterly Report

Company Name: PSEG Morristown Energy Company, LLC
Location: Morristown Industrial Park, Morristown, Indiana
Permit No.: 145-12004-00033
Source: Base Case - four (4) combustion turbines, one (1) emergency diesel generator, and one (1) diesel fire pump
Pollutant: CO
Limit: Less than 250 tons per twelve (12) consecutive month period

Year: _____

Month	CO Emissions (tons/yr)			Total CO Emissions for previous eleven months (tons/yr)	Total CO Emissions for twelve month period (tons)
--	Four (4) turbines	Emergency Diesel Generator	Diesel Fire Pump	--	--
1					
2					
3					

❑ No deviations occurred in this quarter

❑ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title/Position: _____

Signature: _____

Date: _____

Indiana Department of Environmental Management
Office of Air Quality
Compliance Data Section

Quarterly Report

Company Name: PSEG Morristown Energy Company, LLC
Location: Morristown Industrial Park, Morristown, Indiana
Permit No.: 145-12004-00033
Source: Alternate case - two (2) combustion turbines, one (1) emergency diesel generator, and one (1) diesel fire pump
Pollutant: NO_X
Limit: Less than 250 tons per twelve (12) consecutive month period

Year: _____

Month	NO_X Emissions (tons/yr)			Total NO_X Emissions for previous eleven months (tons/yr)	Total NO_X Emissions for twelve month period (tons)
--	Two (2) turbines	Emergency Diesel Generator	Diesel Fire Pump	--	--
1					
2					
3					

❑ No deviations occurred in this quarter

❑ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title/Position: _____

Signature: _____

Date: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

MINOR SOURCE OPERATING PERMIT
ANNUAL NOTIFICATION

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

Company Name:	PSEG Morristown Energy Company, LLC
Address:	Morristown Industrial Park
City:	Morristown, Indiana
Phone #:	TBD
MSOP #:	145-12004-00033

I hereby certify that PSEG Morristown Energy Company LLC is **9** still in operation.
9 no longer in operation.

I hereby certify that PSEG Morristown Energy Company LLC is **9** in compliance with the requirements of MSOP 145-12004-00033.
9 not in compliance with the requirements of MSOP 145-12004-00033.

Authorized Individual (typed):
Title:
Signature:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

MALFUNCTION REPORT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
FAX NUMBER - 317 233-5967

This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE IT HAS POTENTIAL TO EMIT 25 TONS/YEAR PARTICULATE MATTER ?_____, 25 TONS/YEAR SULFUR DIOXIDE ?_____, 25 TONS/YEAR NITROGEN OXIDES?_____, 25 TONS/YEAR VOC ?_____, 25 TONS/YEAR HYDROGEN SULFIDE ?_____, 25 TONS/YEAR TOTAL REDUCED SULFUR ?_____, 25 TONS/YEAR REDUCED SULFUR COMPOUNDS ?_____, 25 TONS/YEAR FLUORIDES ?_____, 100TONS/YEAR CARBON MONOXIDE ?_____, 10 TONS/YEAR ANY SINGLE HAZARDOUS AIR POLLUTANT ?_____, 25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?_____, 1 TON/YEAR LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?_____, OR IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?_____. EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY: PSEG Morristown Energy Company LLC PHONE NO. ( )_____
LOCATION: Morristown/Shelby
PERMIT NO. 142-12004 AFS PLANT ID: 145-00033 AFS POINT ID: _____ INSP:_____
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON:_____
_____

DATE/TIME MALFUNCTION STARTED: _____/_____/ 20____ _____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION:_____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE_____/_____/ 20____ _____ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER:_____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____
_____

MEASURES TAKEN TO MINIMIZE EMISSIONS:_____
_____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES:_____
CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS:_____
CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT:_____
INTERIM CONTROL MEASURES: (IF APPLICABLE)_____
_____

MALFUNCTION REPORTED BY:_____TITLE:_____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY:_____DATE:_____TIME:_____

*SEE PAGE 2

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

*Essential services are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

_____

_____

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a New Source Construction and Minor Source Operating Permit

Source Background and Description

Source Name:	PSEG Morristown Energy Company LLC
Source Location:	Morristown Industrial Park, Morristown, Indiana
County:	Shelby
SIC Code:	4911
Operation Permit No.:	145-12004-00058
Permit Reviewer:	David Howard

The Office of Air Quality (OAQ) has reviewed an application from PSEG Morristown Energy Company LLC relating to the construction and operation of a natural gas fired merchant electric generating station, consisting of the following equipment:

Base Case

(a) Four (4) natural gas fired combustion turbine generators, designated as units SC-1, SC-2, SC-3, SC-4, with a maximum heat input capacity of 932.5 MMBtu/hr (per unit), and exhausting to stacks designated as 1, 2, 3, 4, respectively. Dry low NO_X combustors will be used to control nitrogen oxide emissions.

Or

Alternate Case

(a) Two (2) natural gas fired combustion turbine generators, designated as units SC-1 and SC-2, with a maximum heat input capacity of 1694 MMBtu/hr (per unit), and exhausting to stacks designated as 1A and 2A. Dry low NO_X combustors will be used to control nitrogen oxide emissions.

And

(b) One (1) emergency diesel generator, designated as unit 5, with a maximum heat input capacity of 9.8 MMBtu/hr, and exhausting to the stack designated as 5.

(c) One (1) diesel fire pump, designated as unit 6, with a maximum heat input capacity of 2.1 MMBtu/hr, and exhausting to the stack designated as 6.

PSEG Morristown Energy Company LLC has requested that they be given the option of constructing four small turbines (base case, GE 7EA at 80 MW each) or two large turbines (alternate case, GE 7FA at 170 MW each). The description above for (a) represents both options.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter or Dimensions (feet)	Flow Rate (acfm)	Temperature (^{0}F)
1	Combustion Turbine Generator	56	20X10	1,398,064	998

2	Combustion Turbine Generator	56	20X10	1,398,064	998
3	Combustion Turbine Generator	56	20X10	1,398,064	998
4	Combustion Turbine Generator	56	20X10	1,398,064	998
1A	Combustion Turbine Generator	80	19	2,305,680	1,119
2A	Combustion Turbine Generator	80	19	2,305,680	1,119
5	Emergency Diesel Generator	15	1.33	8,300	880
6	Diesel Fire Pump	15	0.67	1,100	840

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on March 13, 2000, with additional information received on December 11, 2000, December 28, 2000,and April 20, 2001.

Emission Calculations

See Appendix A (Emissions Calculation Spreadsheets (five (5) pages)) of this document for detailed emissions calculations. Criteria pollutant emission rates from the combustion turbines are based on General Electric Vendor data utilizing 100 percent natural gas.

Hazardous Air Pollutant (HAPs) emissions calculations are based on US EPA AP-42 emission factors Chapter 3.1 Supplement F (4/00).

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	175.23
PM_{10}	175.23
SO_2	87.63
VOC	31.58
CO	934.83
NO_X	558.40
Formaldehyde	11.60

Combined HAPs	16.31

(a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of NO_X, CO, and PM_{10} are equal to or greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7.

(b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is equal to or greater than ten (10) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7.

(c) Fugitive Emissions - Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

This operation is considered to be a simple cycle electrical generation operation. According to USEPA's document number EPA 453/R-93-007 "Alternative Control Techniques Document – NO_X Emissions from Stationary Gas Turbines", a simple cycle turbine is defined as an operation that functions with three primary sections, compressor, combustion chamber and turbine fan. First, air is filtered and compressed in a compressor. Compressed air and natural gas are mixed and combusted in the combustion chamber. Exhaust gas from the combustion chamber is expanded through a turbine, which drives both the air compressor and the electrical power generator.

The turbines for the proposed simple cycle electrical generation facility will use Dry Low NO_X combustion technology as NO_X control. Dry Low NO_X combustion utilizes lean combustion and reduced combustor residence time as NO_X control techniques to reduce emission from the turbine. With fuel lean combustion, the additional excess air cools the flame and reduces the rate of thermal NO_X formation. The reduced residence time allows dilution air to be added sooner than with standard combustion resulting in the combustion gases being at a higher temperature for a shorter time, thus reducing the rate of thermal NO_X formation. The Dry Low NO_X burners are an integral design feature to the GE 7 frame turbines.

Actual Emissions

No previous data has been received from the source because this is a new source.

Limited Potential to Emit

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units (fugitive PM and PM_{10} emissions are not counted towards the limited PTE).

The largest emission rate for the base case scenario is carbon monoxide (CO). By limiting the CO emissions below 250 tons per year, all of the other criteria pollutants will be limited to less than PSD threshold levels. The largest emission rate for the alternate case is nitrogen oxide (NO_X). By limiting the NO_X emissions below 250 tons per year, all the other criteria pollutants will be limited to less than PSD threshold levels. The emission limits for the base and alternate case are equivalent to 2,170 and 4,196 hours per year, respectively.

	Limited Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO_2	VOC	CO	NO_X	HAPs

Base Case – 4 7EA Turbines	43.4	43.4	21.7	7.82	249.2	149.1	4.04
Alternate Case – 2 7FA Turbines	37.76	37.76	37.76	5.87	163.97	248.98	7.10
Back-up Diesel Generator	0.015	0.015	0.013	0.025	0.217	0.484	1.06E-3
Emergency Diesel Fire Pump	0.017	0.017	0.016	0.020	0.052	0.241	3.03E-4
Total Emissions – Base Case	43.43	43.43	21.73	7.86	249.47	149.82	4.04
Total Emissions – Alternate Case	37.80	37.80	37.79	5.92	164.24	249.70	7.10

Note that this permit is based on emission limitations, not hours of operation. The hours of operation of this facility can vary, depending on the load of the turbine, outside temperature, and heat input capacity of the turbine. With a lower load, the NO_X emissions tend to decrease where as the CO emissions increase. A lower ambient air temperature can lead to higher NO_X and CO emissions for these units. The hours of operation can fluctuate above or below the values estimated in this technical support document. The permit has limited the NO_X and CO emissions too less than 250 tons per year for both operating scenarios. This will inherently restrict the hours of operation, but the hours of operation could be higher than what is presented in this document based on lower loads, and not operating at conditions that were used to calculate the emissions. To ensure compliance with the established emission limitations, the source will be required by the permit to continually monitor NO_X and CO emissions with a continuous emissions monitoring system (CEMS). The system will record data from the turbines and the source will be required to maintain this data and submit it to IDEM, OAQ on a quarterly basis.

County Attainment Status

The source is located in Shelby County.

Pollutant	Status
PM_{10}	Attainment
SO_2	Attainment
NO_2	Attainment
Ozone	Attainment
CO	Attainment
Lead	Attainment

(a) Volatile organic compounds (VOC) and oxides of nitrogen (NOx) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Shelby County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) Shelby County has been classified as attainment or unclassifiable for VOC, PM_{10}, and SO_2. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(c) Fugitive Emissions
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-

2, 40 CFR 52.21, or 326 IAC 2-3 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

Source Status

New Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Base Case Emissions (ton/yr)	Alternate Case Emissions (ton/yr)
PM	43.43	37.80
PM10	43.43	37.80
SO_2	21.73	37.79
VOC	7.86	5.92
CO	149.47	164.24
NO_x	149.82	249.70
Single HAP (Formaldehyde)	2.87	5.05
Combination HAPs	4.04	7.10

(a) This new source is not a major stationary source because no attainment pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This new source is subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

(a) at least one of the criteria pollutant is greater than or equal to 100 tons per year,

(b) a single hazardous air pollutant (HAP) is greater than or equal to 10 tons per year, or

(c) any combination of HAPs is greater than or equal to 25 tons/year.

This new source shall apply for a Part 70 (Title V) operating permit within twelve (12) months after this source becomes subject to Title V.

Federal Rule Applicability

40 CFR 60, Subpart GG (Stationary Gas Turbines):

The combustion turbines are subject to 40 CFR Part 60, Subpart GG because the heat input at peak load is equal to or greater than 10.7 gigajoules per hour, based on the lower heating value of the fuel fired.

Pursuant to 326 IAC 12-1 and 40 CFR 60, Subpart GG (Stationary Gas Turbines), the owner or operator shall:

(1) Limit nitrogen oxide emissions, as required by 40 CFR 60.332, to:

$$STD = 0.0075 \frac{(14.4)}{Y} + F ,$$

where STD = allowable NO_x emissions (percent by volume at 15 percent oxygen on a dry basis).

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

F = NO_x emission allowance for fuel-bound nitrogen as defined in paragraph (a)(3) of 40 CFR 60.332.

(2) Limit sulfur dioxide emissions, as required by 40 CFR 60.333, to 0.015 percent by volume at 15 percent oxygen on a dry basis, or use natural gas fuel with a sulfur content less than or equal to 0.8 percent by weight;

(3) Install a continuous monitoring system to monitor and record the fuel consumption and the ratio of water to fuel being fired in the turbine required by 40 CFR 60.334(a);

(4) Monitor the sulfur content and nitrogen content of the fuel being fired in the turbine, as required by 40 CFR 60.334(b); and

(5) Report periods of excess emissions, as required by 40 CFR 334(c).

The analyses required above may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor or any other qualified agency

40 CFR Part 63 (National Emission Standards for Hazardous Air Pollutants)

There are currently no National Emission Standards for Hazardous Air Pollutants (NESHAPs) applicable to this source.

40 CFR Part 72-80 (Acid Rain Program)

The requirements of this program shall be detailed in the Acid Rain, Phase II Permit.

State Rule Applicability - Entire Source

326 IAC 1-6-3 (Preventive Maintenance):

(a) The Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) within ninety (90) days after commencement of operation, including the following information on each:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission units;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions;

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

(b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that lack of proper maintenance does not cause or contribute to a violation of any limitation on emissions or potential to emit.

(c) PMP's shall be submitted to IDEM and OAQ upon request and shall be subject to review and approval by IDEM and OAQ.

326 IAC 1-7 (Stack Height Provisions):

Stacks designated as 1-4 (alternate case 1A and 2A) are subject to the requirements of 326 IAC 1-7 (Stack Height Provisions) because the potential emissions, which exhaust through the above mentioned stacks, are greater than 25 tons per year of PM and SO_2. This rule requires that the stack be constructed using Good Engineering Practice (GEP), unless field studies or other methods of modeling show to the satisfaction of IDEM that no excessive ground level concentrations, due to less than adequate stack height, will result.

326 IAC 2-2 (Prevention of Significant Deterioration):

(a) The potential to emit of CO from the four (4) combustion turbines in the base case, or the NO_X two (2) combustion turbines in alternate case, emergency generator, and diesel fire pump shall be limited to less than 250 tons per year per twelve (12) consecutive month period per pollutant, rolled on a monthly basis. Therefore, Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, will not apply. By limiting NO_X and CO emissions to less than 250 tons per year, the SO_2, VOC, PM, and PM_{10} emissions are also less than 250 tons per year.

(b) The source shall be required to install continuous emissions monitoring systems in accordance with 326 IAC 3-5, to demonstrate compliance with the above mentioned NO_X and CO limits.

(c) If the Permittee ever elects to relax the potential to emit limitation such that the BACT rules apply, the Permittee would be required at a minimum, to install a control which would meet the most current BACT limitation for similar sources as determined on a case by case basis.

326 IAC 2-4.1-1 (New Source Toxics Rule)

The New Source Toxics Control rule requires any new or reconstructed major source of hazardous air pollutants (HAPs) for which there are no applicable NESHAP to implement maximum achievable control technology (MACT), determined on a case-by-case basis, when the potential to emit is greater than 10 tons per year of any single HAP. Information on emissions of the 187 hazardous air pollutants are listed in the OAQ Construction Permit Application, Form Y (set forth in the Clean Air Act Amendments of 1990). These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industry.

The New Source Toxic Rule is not applicable because any single HAP emission is not greater than or equal to 10 tons per year and any combination HAP emissions are not greater than or equal to 25 tons per year.

326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because the source has the potential to emit more one hundred (100) tons per year of at least one of the regulated pollutants. Pursuant to this rule, the owner/operator of the source must annually submit an emission statement for the source. The annual statement must be received by July 1 of each year and contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8)(Emission Statement Operating Year).

326 IAC 3-5 (Continuous Monitoring of Emissions)

(a) Pursuant to 326 IAC 3-5-1(d)(1), the owner or operator of a new source with an emission limitation or permit requirement established under 326 IAC 2-5.1-3 and 2-6.1 shall be required to install, calibrate, certify, operate and maintain a continuous emission monitoring system for measuring CO (base case) emission rates in pounds per hour from the four stacks in accordance with 326 IAC 3-5-2 and 326 IAC 3-5-3.

(b) Pursuant to 326 IAC 3-5-1(d)(1), the owner or operator of a new source with an emission limitation or permit requirement established under 326 IAC 2-5.1-3 and 2-6.1 shall be required to install, calibrate, certify, operate and maintain a continuous emission monitoring system or submit an alternative monitoring plan for measuring NO_X (alternate case) emission rates in pounds per hour from the two stacks in accordance with 326 IAC 3-5-2 and 326 IAC 3-5-3.

(c) The Permittee shall submit to IDEM, OAQ, within ninety (90) days after monitor installation, a complete written continuous emissions monitoring standard operating procedure (SOP), in accordance with the requirements of 325 IAC 3-5-4.

(d) The Permittee shall record the output of the system and shall perform the required record keeping, pursuant to 326 IAC 3-5-6, and reporting, pursuant to 326 IAC 3-5-7.

(e) In instances of downtime, the source shall use vendor emission factors to calculate emissions to demonstrate compliance with the CO emission limit, and use the Missing Data Substitution Procedures outlined in 40 CFR Part 75, Subpart D to demonstrate compliance with the NO_X emission limit.

(f) The source may submit to the OAQ alternative emission factors based on the source's CEMS data, to use in lieu of the vendor emission factors in instances of downtime. The alternative emission factors must be approved by the OAQ prior to use in calculating emissions for the limitations established in the construction permit. The alternative emission factors shall be based upon collected monitoring and test data supplied from an approved continuous emission monitoring system. In the event that the information submitted does not contain sufficient data to establish appropriate emission factors, the source shall continue to collect data until appropriate emission factors can be established. During this period of time, the source shall continue to use vendor emission factors to calculate emission to demonstrate compliance with the CO emission limit, and use the Missing Data Substitution Procedures outlined in 40 CFR Part 75, Subpart D to demonstrate compliance with the NO_X emission limit.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

The four (4) combustion turbines (base case) or the two (2) combustion turbines (alternate case) are subject to the requirements of 326 IAC 7-1 because each unit has a potential to emit of 25 tons per year of SO_2 per year. However, there are no applicable SO_2 emission limits for natural gas fueled sources.

326 IAC 8-1-6 (New Facilities; General Reduction Requirements)

Pursuant to 326 IAC 8-1-6 (New Facilities; General Reduction Requirements), the requirements of BACT do not apply because the limited potential to emit of VOC is less than 25 tons per year. Based on the NO_X emission limit, the limited VOC emissions are less than **25** tons per year. Compliance with the NO_X limit will be demonstrated by the use of continuous emissions monitoring systems.

326 IAC 9 (Carbon Monoxide Emission Limits)

Pursuant to 326 IAC 9 (Carbon Monoxide Emission Limits), the source is subject to this rule, because it is a stationary source which emits CO emissions and commenced operation after March 21, 1972. Under this rule, there is not a specific emission limit because the source is not an operation listed under 326 IAC 9-1-2.

326 IAC 10 (Nitrogen Oxides)

This rule does not apply to the source because it is not located in the specified counties (Clark and Floyd) listed under 326 IAC 10-1-1.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 188 hazardous air pollutants (HAPs) set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Quality (OAQ) Construction Permit Application Form Y.

(a) This source will emit levels of air toxics less than those, which constitute a major source according to Section 112 of the 1990 Clean Air Act Amendments.

(b) See attached calculations for detailed air toxic calculations.

Conclusion

The construction and operation of this natural gas fired merchant electric generating station shall be subject to the conditions of the attached proposed **New Source Construction and Minor Source Operating Permit 145-12004-00058.**

Appendix A: Emission Calculations

Company Name:	PSEG Morristown Energy Company LLC
Address:	Morristown Industrial Park, Morristown
Construction Permit No.:	145-12004-00033
Permit Reviewer:	David Howard

Summary

PTE - Base Case

Pollutant	Turbine	Startup	Emergency Generator	Fire Pump	Total
NOx	543.12	14.56	0.484	0.241	558.40
CO	911.04	23.52	0.217	0.052	934.83
VOC	31.536		0.025	0.020	31.58
SO2	87.6		0.013	0.016	87.63
PM/PM10	175.2		0.015	0.017	175.23
Formaldehyde	11.60		2.01E-05	6.44E-05	11.60
Combined HAP	16.31		1.06E-03	3.03E-04	16.31

PTE - Alternate Case

Pollutant	Turbine	Startup	Emergency Generator	Fire Pump	Total
NOx	490.56	14.00	0.484	0.241	505.28
CO	245.28	46.48	0.217	0.052	292.03
VOC	12.264		0.025	0.020	12.31
SO2	78.84		0.013	0.016	78.87
PM/PM10	78.84		0.015	0.017	78.87
Formaldehyde	10.54		2.01E-05	6.44E-05	10.54
Combined HAP	14.82		1.06E-03	3.03E-04	14.82

Limited PTE - Base Case

Pollutant	Turbine	Startup	Emergency Generator	Fire Pump	Total
NOx	134.54	14.56	0.484	0.241	149.82
CO	225.68	23.52	0.217	0.052	249.47
VOC	7.812		0.025	0.020	7.86
SO2	21.7		0.013	0.016	21.73
PM/PM10	43.4		0.015	0.017	43.43
Formaldehyde	2.87		2.01E-05	6.44E-05	2.87
Combined HAP	4.04		1.06E-03	3.03E-04	4.04

Limited PTE - Alternate Case

Pollutant	Turbine	Startup	Emergency Generator	Fire Pump	Total
NOx	234.976	14.00	0.484	0.241	249.70
CO	117.488	46.48	0.217	0.052	164.24
VOC	5.8744		0.025	0.020	5.92
SO2	37.764		0.013	0.016	37.79
PM/PM10	37.764		0.015	0.017	37.80
Formaldehyde	5.05		2.01E-05	6.44E-05	5.05
Combined HAP	7.10		1.06E-03	3.03E-04	7.10

Emission Calculations for Base Case - Four (4) GE 7EA Combustion Turbine Generators

Combustion Turbine Heat Input @ 59 F	932.5	MMBtu/hr	Number of Turbines	4
Combustion Turbine Heat Input @ 0 F	1085.4	MMBtu/hr		
			Hours of Operation per year	2170
			Hours of Startup/Shutdown per year	233

Potential to Emit - Before Enforceable Limits

Combustion Turbines					
Pollutant	Heat Input		Emission Factor (lb/hr)	PTE/CT	Total PTE
NOx	932.5	MMBtu/hr	31	135.78 tons/yr	543.12 tons/yr
CO	932.5	MMBtu/hr	52	227.76 tons/yr	911.04 tons/yr
VOC	932.5	MMBtu/hr	1.8	7.884 tons/yr	31.536 tons/yr
SO2	932.5	MMBtu/hr	5	21.9 tons/yr	87.6 tons/yr
PM/PM10	932.5	MMBtu/hr	10	43.8 tons/yr	175.2 tons/yr

Potential to Emit - After Enforceable Limits

Combustion Turbines					
Pollutant	Heat Input		Emission Factor (lb/hr)	PTE/CT	Total PTE
NOx	932.5	MMBtu/hr	31	33.635 tons/yr	134.54 tons/yr
CO	932.5	MMBtu/hr	52	56.42 tons/yr	225.68 tons/yr
VOC	932.5	MMBtu/hr	1.8	1.953 tons/yr	7.812 tons/yr
SO2	932.5	MMBtu/hr	5	5.425 tons/yr	21.7 tons/yr
PM/PM10	932.5	MMBtu/hr	10	10.85 tons/yr	43.4 tons/yr

Emission Calculations for Base Case - Two (2) GE 7FA Combustion Turbine Generators

Combustion Turbine Heat Input @ 59 F	1694.2	MMBtu/hr	Number of Turbines	2
Combustion Turbine Heat Input @ 0 F	1864.1	MMBtu/hr		
			Hours of Operation per year	4196

Potential to Emit - Before Enforceable Limits

Combustion Turbines				
Pollutant	Heat Input	Emission Factor (lb/hr)	PTE/CT	Total PTE
NOx	1694.2 MMBtu/hr	56	245.28 tons/yr	490.56 tons/yr
CO	1694.2 MMBtu/hr	28	122.64 tons/yr	245.28 tons/yr
VOC	1694.2 MMBtu/hr	1.4	6.132 tons/yr	12.264 tons/yr
SO2	1694.2 MMBtu/hr	9	39.42 tons/yr	78.84 tons/yr
PM/PM10	1694.2 MMBtu/hr	9	39.42 tons/yr	78.84 tons/yr

Potential to Emit - After Enforceable Limit

Combustion Turbines				
Pollutant	Heat Input	Emission Factor (lb/hr)	PTE/CT	Total PTE
NOx	1694.2 MMBtu/hr	56	117.488 tons/yr	234.976 tons/yr
CO	1694.2 MMBtu/hr	28	58.744 tons/yr	117.488 tons/yr
VOC	1694.2 MMBtu/hr	1.4	2.9372 tons/yr	5.8744 tons/yr
SO2	1694.2 MMBtu/hr	9	18.882 tons/yr	37.764 tons/yr
PM/PM10	1694.2 MMBtu/hr	9	18.882 tons/yr	37.764 tons/yr

Startup and Shutdown Emissions

Simple Cycle Operation

Base Case

Estimated max number of startups per year	280	Duration of Startup	20	minutes
Estimated max number of shutdowns per year	280	Duration of Shutdown	30	minutes

Emissions from Simple Cycle Operation				
Pollutant	Startup Emission (lb/startup)	Shutdown Emission (lb/shutdown)	Emission Rate/Turbine (tons/yr)	Total Emission Rate (tons/yr)
NO_X	13	13	3.64	14.56
CO	21	21	5.88	23.52

Alternate Case

Estimated max number of startups per year	280	Duration of Startup	19	minutes
Estimated max number of shutdowns per year	280	Duration of Shutdown	30	minutes

Emissions from Simple Cycle Operation				
Pollutant	Startup Emission	Shutdown Emission	Emission Rate/Turbine	Total Emission Rate
NO_X	25	25	7.00	14.00
CO	83	83	23.24	46.48

HAPs Emission Calculations - Before and After Enforceable Limits

Combustion Turbine - Base Case						
HAPs	Emission Factor (lb/MMBtu)	Emission Rate (lb/hr)	PTE/CT (tpy at 8760)	Total PTE (4 CT at 8760) (tpy)	Limited PTE/CT (tpy)	Total Limited PTE (4 CT tpy)
1,3 Butadiene	4.30E-07	4.01E-04	1.76E-03	7.03E-03	4.35E-04	1.74E-03
Acetaldehyde	4.00E-05	3.73E-02	1.63E-01	6.53E-01	4.05E-02	1.62E-01
Acrolein	6.40E-06	5.97E-03	2.61E-02	1.05E-01	6.48E-03	2.59E-02
Benzene	1.20E-05	1.12E-02	4.90E-02	1.96E-01	1.21E-02	4.86E-02
Ethylbenzene	3.20E-05	2.98E-02	1.31E-01	5.23E-01	3.24E-02	1.30E-01
Formaldehyde	7.10E-04	6.62E-01	2.90E+00	1.16E+01	7.18E-01	2.87E+00
Naphthalene	1.30E-06	1.21E-03	5.31E-03	2.12E-02	1.32E-03	5.26E-03
PAHs	2.20E-06	2.05E-03	8.99E-03	3.59E-02	2.23E-03	8.90E-03
Toluene	1.30E-04	1.21E-01	5.31E-01	2.12E+00	1.32E-01	5.26E-01
Xylene	6.40E-05	5.97E-02	2.61E-01	1.05E+00	6.48E-02	2.59E-01
	single HAP			**11.60**		**2.87**
	combined HAP			**16.31**		**4.04**

Combustion Turbine - Alternate Case						
HAPs	Emission Factor (lb/MMBtu)	Emission Rate (lb/hr)	PTE/CT (tpy at 8760)	Total PTE (4 CT at 8760) (tpy)	Limited PTE/CT (tpy)	Total Limited PTE (2 CT tpy)
1,3 Butadiene	4.30E-07	7.29E-04	3.19E-03	6.38E-03	1.53E-03	3.06E-03
Acetaldehyde	4.00E-05	6.78E-02	2.97E-01	5.94E-01	1.42E-01	2.84E-01
Acrolein	6.40E-06	1.08E-02	4.75E-02	9.50E-02	2.27E-02	4.55E-02
Benzene	1.20E-05	2.03E-02	8.90E-02	1.78E-01	4.27E-02	8.53E-02
Ethylbenzene	3.20E-05	5.42E-02	2.37E-01	4.75E-01	1.14E-01	2.27E-01
Formaldehyde	7.10E-04	1.20E+00	5.27E+00	1.05E+01	2.52E+00	5.05E+00
Naphthalene	1.30E-06	2.20E-03	9.65E-03	1.93E-02	4.62E-03	9.24E-03
PAHs	2.20E-06	3.73E-03	1.63E-02	3.27E-02	7.82E-03	1.56E-02
Toluene	1.30E-04	2.20E-01	9.65E-01	1.93E+00	4.62E-01	9.24E-01
Xylene	6.40E-05	1.08E-01	4.75E-01	9.50E-01	2.27E-01	4.55E-01
	single HAP			**10.54**		**5.05**
	combined HAP			**14.82**		**7.10**

Emission Calculation for Back-up Diesel Generator

Heat Input Capacity	9.8	MMBtu/hr	Maximum Hours of Operation	52	hrs/yr
Horsepower	1341	hp			
			Weight Percent Sulfur	0.05	%

Pollutant	Emission Factor (lb/MMBtu) >250 and <600	Emission Factor (lb/MMBtu) >600	Emission Rate (lb/hr)	PTE (tons/yr)
NOX	4.41	1.9	18.620	0.484
CO	0.95	0.85	8.330	0.217
VOC	0.36	0.1	0.980	0.025
SO2	0.29	0.0505	0.495	0.013
PM10	0.31	0.0573	0.562	0.015

HAP	lb/MMBtu	lb/hr	tons/yr
Benzene	7.76E-04	7.60E-03	1.98E-04
Toluene	2.81E-04	2.75E-03	7.16E-05
Xylene	1.93E-04	1.89E-03	4.92E-05
Propylene	2.79E-03	2.73E-02	7.11E-04
Formaldehyde	7.89E-05	7.73E-04	2.01E-05
Acetaldehyde	2.52E-05	2.47E-04	6.42E-06
	Combined HAPs		1.06E-03

*Emission factors based on AP-42 Table 3.3-2, 3.4-1, and 3.4-2

Emission Calculation for Emergency Diesel Fire Pump

Heat Input Capacity	2.1	MMBtu/hr	Maximum Hours of Operation	52	hrs/yr
Horsepower	290	hp			
			Weight Percent Sulfur	0.05	%

Pollutant	Emission Factor (lb/MMBtu) >250 and <600	Emission Factor (lb/MMBtu) >600	Emission Rate (lb/hr)	PTE (tons/yr)
NOX	4.41	1.9	9.261	0.241
CO	0.95	0.85	1.995	0.052
VOC	0.36	0.1	0.756	0.020
SO2	0.29	0.0505	0.609	0.016
PM10	0.31	0.0573	0.651	0.017

HAP	lb/MMBtu	lb/hr	tons/yr
Benzene	9.30E-04	1.95E-03	5.08E-05
Toluene	4.09E-04	8.59E-04	2.23E-05
Xylene	2.85E-04	5.99E-04	1.56E-05
Propylene	2.58E-03	5.42E-03	1.41E-04
Formaldehyde	1.18E-03	2.48E-03	6.44E-05
PAH	1.68E-04	3.53E-04	9.17E-06
	Combined HAPs		3.03E-04

*Emission factors based on AP-42 Table 3.3-1,3.3-2, 3.4-1, and 3.4-2