

Facility Name: **Smarr Energy Facility**  
 City: Smarr, Georgia  
 County: Monroe  
 AIRS #: 04-13-207-00030

Application #: AR-16252 (Acid Rain) and TV-16253 (Operating Permit)  
 Date Application Received: June 13, 2005  
 Permit No: 4911-207-0030-V-06-0

<b>Program</b>	<b>Review Engineers</b>	<b>Review Managers</b>
<b>SSPP</b>	Bert Pearce	Michelle Keith
<b>ISMP</b>	Frank Nederhand	Ross Winne
<b>SSCP</b>	Terri Crosby	James Eason
<b>Toxics</b>	Not applicable	Not applicable

## Introduction

This narrative is being provided to assist the reader in understanding the content of the attached draft Part 70 operating permit. Complex issues and unusual items are explained herein simpler terms and/or greater detail than is sometimes possible in the actual permit. This permit is being issued pursuant to: (1) Georgia Air Quality Act, O.C.G.A § 12-9-1, et seq. and (2) Georgia Rules for Air Quality Control, Chapter 391-3-1, and (3) Title V of the Clean Air Act. Section 391-3-1-.03(10) of the Georgia Rules for Air Quality Control incorporates requirements of Part 70 of Title 40 of the Code of Federal Regulations promulgated pursuant to the Federal Clean Air Act. The primary purpose of this permit is to consolidate and identify existing state and federal air requirements applicable to **Smarr Energy Facility** and to provide practical methods for determining compliance with these requirements. The following narrative is designed to accompany the draft permit and is presented in the same general order as the permit. It initially describes the facility receiving the permit, the applicable requirements and their significance, and the methods for determining compliance with those applicable requirements. This narrative is intended as an adjunct for the reviewer and to provide information only. It has no legal standing. Any revisions made to the permit in response to comments received during the public participation and EPA review process will be described in an addendum to this narrative.

**I. Facility Description****A. Facility Identification**

1. Facility Name: Smarr Energy Facility

2. Parent/Holding Company Name: Smarr EMC.

The operator of the facility is Oglethorpe Power Corporation (OPC) and OPC is responsible for certifying compliance with this permit.

3. Previous and/or Other Name(s): Previous names identified include the following:

Oglethorpe Power Corporation - Smarr Combustion Turbine Project  
Smarr Electric Membership Corporation - Smarr Combustion Turbine Project  
Smarr EMC - Smarr Combustion Turbine Project

4. Facility Location: 1077 Rumble Road, Smarr, Monroe County, Georgia 31086

5. Attainment, Non-attainment Area Location, or Contributing Area

Monroe County is an attainment area for all criteria pollutants but has been determined, by the Division, to be an area contributing to the ambient air level of ozone in the metropolitan Atlanta ozone nonattainment area.

6. Class I Area Impacts

The facility is not located within 200 km of a Class I area

**B. Site Determination**

There are no other facilities which could possibly be contiguous or adjacent and under common control.

**C. Existing Permits**

Table 1 below lists all current Title V permits, all amendments, 502(b)(10) changes, and off-permit changes, issued to the facility, based on a comparative review of form A.6, Current Permits, of the Title V application and the "Permit" file(s) on the facility found in the Air Branch office.

Table 1: List of Current Permits, Amendments, and Off-Permit Changes

Permit Number and/or Off-Permit Change	Date of Issuance/Effectiveness	Purpose of Issuance
4911-207-0031-E-02-0	March 1, 1999	Phase II Acid Rain Permit
4911-207-0031-E-02-1	August 31, 1999	Amended Phase II Acid Rain Permit to reflect the new name of the owner
4911-207-0031-E-03-0	March 1, 1999	Constuction and operation of 2 combustion turbines
4911-207-0031-E-04-0	July 19, 1999	Constuction and operation of 2 combustion turbines (same units permitted March 1, 1999) and 1 heater
4911-207-0030-V-05-0	January 1, 2001	Initial Title V operating permit

#### D. Process Description

##### 1. SIC Codes(s)

4911

##### 2. Description of Product(s)

The Smarr Energy Facility is a peaking power generation facility which provides approximately 212 megawatts of capacity.

##### 3. Overall Facility Process Description

The facility includes two Siemens Model V84.2 combustion turbines (T001 and T002) operating in simple cycle mode. The turbines are fired exclusively by pipeline quality natural gas. The natural gas fired by the turbines is preheated, as needed, by Heater H001, which is also fired by natural gas. The turbines have the capability of utilizing water injection for power augmentation, and may also use evaporative cooling to lower the temperature of the intake air.

##### 4. Overall Process Flow Diagram

The facility provided a process flow diagram with the Title V permit application.

#### E. Regulatory Status

##### 1. PSD/NSR

The facility is a minor source under federal NSR regulations because it has potential emissions of NO<sub>x</sub> capped so as not to exceed 249 tons during any consecutive 12 months. In addition, potential emissions of other criteria air pollutants are less than 250 tons.

## 2. Title V Major Source Status by Pollutant

Table 2: Title V Major Source Status

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	Y	✓		
PM <sub>10</sub>	Y	✓		
SO <sub>2</sub>	Y			✓
VOC	Y	✓		
NO <sub>x</sub>	Y	✓		
CO	Y	✓		
TRS	Y			✓
H <sub>2</sub> S	Y			✓
Individual HAP	Y			✓
Total HAPs	Y			✓

## 3. MACT Standards

The facility is not subject to a proposed or final MACT standard.

## 4. Program Applicability (AIRS Program Codes)

Program Code	Applicable (y/n)
Program Code 6 - PSD	no
Program Code 8 – Part 61 NESHAP	no
Program Code 9 - NSPS	yes
Program Code M – Part 63 NESHAP	no
Program Code V – Title V	yes

## **Regulatory Analysis**

### **II. Facility Wide Requirements**

- A. Emission and Operating Caps:  
None applicable.
- B. Applicable Rules and Regulations  
None applicable.
- C. Compliance Status  
Not applicable.
- D. Operational Flexibility  
None applicable.
- E. Permit Conditions  
None applicable.

### III. Regulated Equipment Requirements

#### A. Brief Process Description

A brief process description is specified in the narrative for Title V Permit No. 4911-207-0030-V-05-0. Please refer to this narrative.

#### B. Equipment List for the Process

Emergency Generator GEN1 has been added to the equipment list, as shown in the table below.

Emission Units		Specific Limitations/Requirements		Air Pollution Control Devices	
ID No.	Description	Applicable Requirements/Standards	Corresponding Permit Conditions	ID No.	Description
T001	Combustion Turbine	391-3-1-.02(2)(g) 391-3-1-.02(2)(b) 391-3-1-.02(2)(nnn) 40 CFR 60 Subpart GG Acid Rain	3.2.1, 3.2.2, 3.3.1, 3.3.2, 3.3.3, 3.4.4, 3.4.5, 5.2.1, 5.2.2, 6.2.1, 6.2.2, 6.2.3, 6.2.4, 6.2.5, 6.2.7, 6.2.10, 6.2.11	DLN 1	DLN Burner
T002	Combustion Turbine	391-3-1-.02(2)(g) 391-3-1-.02(2)(b) 391-3-1-.02(2)(nnn) 40 CFR 60 Subpart GG Acid Rain	Same as T002	DLN 1	DLN Burner
H001	Heater	391-3-1-.02(2)(d) 391-3-1-.02(2)(g) 40 CFR 60 Subpart Dc	3.2.1, 3.3.3, 3.4.1, 3.4.2, 3.4.3, 5.2.2, 6.2.6, 6.2.7, 6.2.8	None	NA
GEN1	Emergency Generator, 500 kW	391-3-1-.02(mmm)7.	3.2.3, 5.2.2, 6.2.9	None	NA

\* Generally applicable requirements contained in this permit may also apply to emission units listed above.

#### C. Equipment & Rule Applicability

Equipment and rule applicability are discussed in the narrative for the original permit, 4911-207-0030-V-05-0. Please refer to that narrative. There have been no subsequent Title V permit amendments.

The facility is subject to Georgia Rule 391-3-1-.02(2)(mmm) because it is located in an affected county and has a stationary engine (Source Code GEN1) that is used to generate electricity. The engine is intended to supply emergency power only.

#### Emission and Operating Caps:

Emission and operating caps are discussed in the narrative for the original permit, 4911-207-0030-V-05-0. Please refer to that narrative. There have been no subsequent Title V permit amendments.

With this renewal, an operating limit has been added for emergency generator GEN1. The generator will be limited to no more than 199 hours of operation in any 12 consecutive month period. The facility is taking this limit in order to be exempt from the NO<sub>x</sub> emissions limits of Georgia Rule 391-3-1-.02(2)(mmm).

#### Rules and Regulations Assessment:

Rules and regulations assessment are discussed in the narrative for the original permit, 4911-207-0030-V-05-0. Please refer to that narrative.

#### D. Compliance Status

According to the permit application, the facility is in compliance.

#### E. Operational Flexibility

None applicable.

#### F. Permit Conditions

Original permit conditions are discussed in the narrative for Permit No. 4911-207-0030-V-05-0.

Condition No. 3.2.3 has been added to limit Generator GEN1 to no more than 199 hours per 12 consecutive months, as discussed above.

**IV. Testing Requirements (with Associated Record Keeping and Reporting)****A. General Testing Requirements**

The permit includes a requirement that the Permittee conduct performance testing on any specified emission unit when directed by the Division. Additionally, a written notification of any performance test(s) is required 30 days prior to the date of the test(s) and a test plan is required to be submitted with the test notification. Test methods and procedures for determining compliance with applicable emission limitations are listed and test results are required to be submitted to the Division within 60 days of completion of the testing. The description of Method 19 has been modified to reflect that this is a method for converting concentrations to emission rates.

**B. Specific Testing Requirements****1. Individual Equipment**

None applicable.

**2. Equipment Groups (all subject to the same test requirements):**

None applicable.

**V. Monitoring Requirements****A. General Monitoring Requirements**

Condition 5.1.1 requires that all continuous monitoring systems required by the Division be operated continuously except during monitoring system breakdowns and repairs. Monitoring system response during quality assurance activities is required to be measured and recorded. Maintenance or repair is required to be conducted in an expeditious manner.

**B. Specific Monitoring Requirements****1. Individual Equipment:**

Specific monitoring requirements are discussed in the narrative for the original permit, 4911-207-0030-V-05-0. Please refer to that narrative.

Condition No. 5.2.2, paragraph d, has been added for the monitoring of the operating hours of the emergency generator.

**2. Equipment Groups (all subject to the same monitoring requirements):**

None applicable.

**C. Compliance Assurance Monitoring (CAM)**

Not applicable. There are no pollution control devices at the facility.

## VI. Record Keeping and Reporting Requirements

### A. General Record Keeping and Reporting Requirements

The Permit contains general requirements for the maintenance of all records for a period of five years following the date of entry and requires the prompt reporting of all information related to deviations from the applicable requirements. Records, including identification of any excess emissions, exceedances, or excursions from the applicable monitoring triggers, the cause of such occurrence, and the corrective action taken, are required to be kept by the Permittee and reporting is required on a quarterly basis.

### B. Specific Record Keeping and Reporting Requirements

Specific record keeping and reporting requirements are discussed in the narrative for the original permit, 4911-207-0030-V-05-0. Please refer to that narrative.

Changes have been made to the record keeping and reporting requirements of 40 CFR 60 Subpart GG ( "Standard of Performance for Stationary Gas Turbines") since the original Title V permit was issued. Changes in Subpart GG that affect the Smarr Energy Facility are summarized below.

In Condition No. 6.1.7 b of the original permit, any one-hour average in which the NO<sub>x</sub> concentration from any combustion turbine exceeded 101 ppmv was designated as an exceedance. Under the current version of Subpart GG, any four-hour rolling average in which the NO<sub>x</sub> concentration exceeds the NO<sub>x</sub> threshold is designated as excess emissions (40 CFR 60.334(j)(1)(iii)). The updated requirement has been moved to 6.1.7 a in the new permit.

Subpart GG now allows certification of fuel as natural gas (as defined in the regulation) to meet the requirement for verification of the use of fuel with no more than 0.8 percent sulfur (40 CFR 60.334(h)(3)). In the original permit, Condition No. 6.2.1 requires the facility to submit a semiannual analysis, by the supplier, of the fuel sulfur content. Because the semiannual submission still meets the requirements of Subpart GG, it has been retained without change in the new permit.

Associated with the changes to Subpart GG, citation references for various permit requirements have been changed or added. The citations have been updated in the new permit as needed.

A requirement has been added to 6.2.3 for records of hourly natural gas usage. These records are needed to support the quantification of hourly and monthly NO<sub>x</sub> emissions.

Some language in Condition Nos. 6.2.4 and 6.2.5 has been changed to add clarity pertaining to mass emissions and mass emissions rates.

Condition No. 6.2.8 b has been deleted, as it duplicated a requirement included in Condition No. 6.1.4. Condition No. 6.2.8a has been moved to Condition No. 6.1.7d in order to consolidate semiannual reporting requirements.

Condition No. 6.2.9 has been moved to 6.2.8. New Condition No. 6.2.9 has been added to require records of operating time of the emergency generator. The records will be used to demonstrate that the generator qualifies for exemption from the NO<sub>x</sub> emissions limits of Georgia Rule 391-3-1-.02(2)(mmm).

Condition Nos. 6.2.10 and 6.2.11 have been added to require records of NO<sub>x</sub> and O<sub>2</sub> measurements in the discharge to the atmosphere from the combustion turbines. The records will be used to demonstrate compliance with Georgia Rule 391-3-1-.02(2)(nnn) and federal rule 40 CFR Subpart GG, respectively.

**VII. Specific Requirements**

## A. Operational Flexibility

None applicable.

## B. Alternative Requirements

None applicable

## C. Insignificant Activities

Insignificant activities are presented in Attachment B.

## D. Temporary Sources

None applicable

## E. Short-Term Activities

One short-term activity, sand blasting, is specified in the permit.

## F. Compliance Schedule/Progress Reports

None applicable.

## G. Emissions Trading

None applicable.

## H. Acid Rain Requirements

The facility submitted Application No. AR-16252 to synchronize the effective dates of the Acid Rain and Title V permits. Acid Rain permit effective dates have been added to Condition No. 7.9. The facility's Acid Rain permit application dated June 9, 2005, is included as Attachment D.

## I. Stratospheric Ozone Protection Requirements

The application indicates that the facility is subject to Title VI .

## J. Pollution Prevention

No applicable requirements.

## K. Specific Conditions

None applicable.

**VIII. General Provisions**

Generic provisions have been included in this permit to address the requirements in 40 CFR Part 70 that apply to all Title V sources, and the requirements in Chapter 391-3-1 of the Georgia Rules for Air Quality Control that apply to all stationary sources of air pollution.

## Addendum to Narrative

EPD issued draft Title V Permit No. 4911-207-0030-V-06-0 for Smarr EMC's Smarr Energy Facility on October 13, 2006. The public notice for this permit was published in the Monroe County Reporter on November 8, 2006. The public comment period expired December 8, 2006. Comments were received from the applicant, Oglethorpe Power Corporation, on December 8, 2006. No other comments were received.

Each Oglethorpe comment is printed below, with suggested additions shown in underline format and suggested deletions shown in strikethrough format. Each comment is followed by a response from EPD.

**Condition 1.3:**

**Comment:** OPC suggests that this condition be revised, to reflect the existence of an emergency generator at the SEF, as follows:

The facility includes two simple cycle, single shaft, combustion turbines (T001 and T002). The units fire natural gas, exclusively, and they have the capability of utilizing water injection for power augmentation. Each unit generates a base load rating of approximately 106 MW of gross electrical energy at ISO conditions of 590 F, 60% relative humidity and 14.7 psia. Each turbine vents combustion gases through its own 90 foot stack. Each turbine also vents lubrication oil through a demister vent located 25 feet up the side of the enclosure. The natural gas used by the turbines may be preheated in Heater H001 which, when operating, also runs exclusively on natural gas. A 500 kW diesel-fired internal combustion engine that functions as an emergency generator is also located at the site.

**Response:** The process description has been revised to include the emergency generator.

**Condition 3.1:**

**Comment:** Add condition 7.9 to the list of permit conditions under the heading "Corresponding Permit Conditions" for T001. Under that same heading for Emission Unit T002, the entry should be corrected to read: Same as T002~~1~~. Finally, the entry under the "ID No." heading for unit T002 should be corrected as follows: DLN ~~±~~2.

**Response:** The emissions units table has been revised as requested with the exception of the inclusion of Condition 7.9. EPD's practice is not to include Section 7 Conditions in the Section 3 table.

**Condition 6.1.4.d.:**

**Comment:** Condition 6.1.4 is based on a conditional exemption that applies to the SEF for excess emissions resulting from startups, shutdowns or malfunctions. The exemption is part of the Division's regulations and its State Implementation Plan<sup>2</sup>. The condition requires the specific identification of each period of excess emissions that occur within the parameters of the SSM Rule. So as to more accurately reflect the parameters of this authorizing regulation, the condition should be slightly revised as follows:

Specific identification of each period of such excess emissions, exceedances, and excursions that occur ~~during~~ as a result of startups, shutdowns, or malfunctions of the affected facility.

<sup>2</sup> GA Rule 391-3-1-.02(2)(a)7

**Response:** The Division does not agree with the suggested change in language. The intent of Condition 6.1.4 is for the permittee to report all periods of excess emissions, exceedances, and excursions and to identify all such periods that coincide with startups, shutdowns, or malfunctions. The Permittee is then to include the nature and cause of any such malfunction (if known) for the purpose of demonstrating whether or not the excess emissions period is allowed under Georgia Rule 391-3-1-.02(2)(a)7.

OPC's suggested language would restrict the information available to the Division for ultimate determination of whether excess emissions, exceedances, or excursions that occur during startups, shutdowns, or malfunctions are or are not in compliance with the rules. In addition, Condition No. 6.1.4 is one of the Title V permit template general conditions, which are not revised based on requests from individual facilities. Therefore, there is no change to the permit pertaining to this comment.

**Condition No. 6.2.10:**

**Comment:** For purposes of clarity and uniformity, a valid operating hour should be defined in the permit, so emissions are properly recorded and reported. In addition, Condition 6.2.10 should be revised slightly, so as not to conflict with Condition 6.1.7.b.iii. and GA Rule 391-3-1-.02(2)(nnn). The following revisions are suggested to Condition 6.2.10 to resolve these issues:

The Permittee shall record, for each hour of operation, the one-hour average NO<sub>x</sub> concentration, the percent O<sub>2</sub>, and the three-hour block rolling average NO<sub>x</sub> concentration (in ppm, corrected to 15% O<sub>2</sub>, dry basis), of the discharge to the atmosphere from each combustion turbine. For the purpose of this condition and condition 6.1.7.b.iii, the average NO<sub>x</sub> concentration shall be calculated from the three most recent hours of operation. For an hour to be included in this calculation, the one-hour average concentration must be based upon at least 30 minutes of turbine operation and must include at least two data points, with each representing a 15-minute period. Each clock hour begins a new one-hour period. This condition applies during the period May 1 through September 30 of each year.  
[391-3-1-.02(2)(nnn)]

**Response:** The suggested language is in agreement with Section 2.121.3, revised September 2001, of the Division's Procedures for Testing and Monitoring Sources of Air Pollutants (the PTM). The permit condition has been revised as requested.

**Condition No. 6.2.11:**

**Comment:** Condition 6.2.11 should be revised slightly, to account for the proper units for the NO<sub>x</sub> limit found in the applicable NSPS for the combustion turbines – Emission Units T001 and T002:

Four-hour average NO<sub>x</sub> concentrations shall be recorded in ppm % by volume, corrected to 15% oxygen, dry basis.  
[40 CFR 60.334(j)(1)(iii)].

**Response:** The Division agrees with the comment and the condition has been revised accordingly.