

TITLE V APPLICATION REVIEW

Facility Name: Hartwell Energy Facility

City: Hartwell

County: Hart

AIRS #: 147-00021

Application #: TV- 9201

Date Application Received: October 22, 1996

Date Application Deemed Administratively Complete: January 14, 1997

Date of Draft Permit: January 9, 1998

Permit No: 4911-147-0021-V-01-0

Program	Review Engineers	Review Managers
SSPP/ASU	James Capp	John Yntema
SSCP/ASU	Stacey Hodge	James Eason
ISMP	Jim Kelly	Larry Webber
TOXICS	N/A	N/A

Introduction

This narrative is being provided to assist the reader in understanding the content of the attached draft Title V operating permit. Complex issues and unusual items are explained in simpler terms and/or greater detail than is sometimes possible in the actual permit. This permit is being proposed pursuant to: (1) Section 391-3-1-.03(10) of the Georgia Rules for Air Quality Control, (2) Part 70 of Chapter I of Title 40 of the Code of Federal Regulations, and (3) Title V of the Clean Air Act Amendments of 1990. The primary purpose of this permit is to consolidate and identify existing state and federal air requirements applicable to **Hartwell 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, then the applicable requirements and their significance, and finally the methods for determining compliance with those applicable requirements. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Any revisions made to the permit in response to comments received during the public participation process will be described in an addendum to this narrative.

I. Facility Description

A. Facility Identification

- 1. Facility Name: Hartwell Energy Facility
- 2. Parent/Holding Company Name: Hartwell Energy Limited Partnership
- 3. Previous and/or Other Name(s): No previous names identified
- 4. Facility Location: 415 Smith-McGee
Highway 181
Hartwell, Hart County, Georgia

5. Attainment or Non-attainment Area Location

Area is designated as attainment area for all criteria pollutants.

6. Class I Area Impacts

The facility is located in northeast Georgia and is not located within 100 km of a Class I area.

B. Site Determination

There are no applicable issues with regard to the 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 permits (including Part 71 permits), as amended, issued to the facility. This list is based on a comparative review of Item 19 in Section 1.10 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, as Amended

Permit Number and/or Purpose of Issuance	Date of Issuance and Date of Amendments (if any)	Comments	
		Yes	No
4911-073-10941 for two 159 MW Simple Combustion Turbines	July 28, 1992		X

D. Process Description

1. SIC Code(s): Major - 4911
 Other - none
2. Description of Product(s) - Hartwell Energy Facility generates electricity for sale.
3. Overall Facility Process Description

This facility has two simple combustion turbines each capable of generating 159 MW of electricity. Each combustion turbine can burn natural gas or distillate fuel oil. This facility also has two fuel oil storage tanks each with a capacity of 2.35 million gallons.
4. Overall Process Flow Diagram (optional) - Not included

E. Regulatory Status

1. PSD/NSR

This facility is a major source under PSD because it has potential emissions of NO_x and SO₂ greater than 250 tpy (it is not one of the 28 named source categories under PSD). The facility was permitted in 1992 and was permitted under the PSD regulations.

2. Title V Major Source Status by Pollutant

Table 3: Title V Major Source Status

Pollutant	Is the pollutant emitted?	If emitted, what is the facility's Title V status?		
		Major Source Status	Major Source requesting SM Status	Non-Major Source Status
PM	X			X
PM ₁₀	X			X
SO ₂	X	X		
VOC	X			X
NO _x	X	X		
CO	X	X		
TRS	n/a			X
H ₂ S	n/a			X
Individual HAP	X			X
Total HAPs	X			X

3. MACT Standards

This facility is not major for HAPs. It is not subject to any proposed or final MACT Standards.

This facility could be subject to a future MACT standard for combustion turbines if area sources are covered by the rule.

4. Program Applicability

Indicate if the following programs are applicable to the facility (with a “yes” or “no”).

Program Code 6 - PSD: yes
 Program Code 8 - Pt. 61 NESHAP: no
 Program Code 9 - NSPS: yes
 Program Code M - Pt. 63 NESHAP: no
 Program Code V - Title V: yes

Regulatory Analysis

All applicable regulations covered in Part 3.0 of the Title V Permit are federally enforceable. Hartwell Energy is not subject to any State-only enforceable regulations.

II. Requirements Pertaining to the Entire Facility

- A. Emission and Operating Caps: Hartwell Energy Facility has no facility-wide emission or operating caps.
- B. Applicable Rules and Regulations:
- Rules and Regulations Assessment - Hartwell Energy Facility is not subject to any facility-wide air quality rules other than the NSPS general provisions (40 CFR 60 Subpart A) and the general provisions in Section VIII.
 - Emission and Operating Standards - Not applicable.
- C. Compliance Status: See Section VII.F.
- D. Testing, Monitoring and Record Keeping: See Sections IV, V, and VI.
- E. Operational Flexibility: See Section VII.A.
- F. Permit Conditions: The facility must comply with 40 CFR 60 Subpart A - General Provisions. The facility has only two significant emission units. All emission limitations, testing, monitoring, and record keeping will address one of those two units.

III. Requirements for Emission Units

- A. Brief Process Description: This facility has two simple combustion turbines each capable of generating 159 MW of electricity. Each combustion turbine can burn natural gas or distillate fuel oil. This facility also has two fuel oil storage tanks each with a capacity of 2.35 million gallons.
- B. Equipment List for the Process:

Emission Unit ID No.	Emission Unit Description	Pollutant(s) Emitted	Applicable Requirement(s)/Standard(s)	Federal Enforceability
H101	Combustion Turbine Unit 01	NOx, SO2, VOC, CO, PM	40 CFR 52.21, 40 CFR 60 Subpart GG, and Acid Rain	Yes
H201	Combustion Turbine Unit 02	NOx, SO2, VOC, CO, PM	40 CFR 52.21, 40 CFR 60 Subpart GG, and Acid Rain	Yes
H301	Fuel Oil Storage Tank 01	VOC	40 CFR Subpart Kb	Yes
H302	Fuel Oil Storage Tank 02	VOC	40 CFR Subpart Kb	Yes

- C. Equipment & Rule Applicability:
- Emission and Operating Caps

The combustion turbines were each limited to 2500 hours of operation per year in their PSD permit. This value was used in the BACT analysis to determine potential emissions and therefore affected the costs of the potential control technology (\$/ton). Hartwell Energy has requested in Section 3.30 of their Title V application to make the limit 5000 hours per year for both turbines. This would not increase the potential emissions from the site but would allow them some flexibility. I have modified the condition as they have requested.

- **Applicable Rules and Regulations -**

Rules and Regulations Assessment: Both combustion turbines were constructed in 1993. Each combustion turbine is subject to 40 CFR 52.21 (PSD) and 40 CFR 60 Subpart GG (NSPS). In this case, the PSD limits were much more stringent than the NSPS limits. So, the NSPS emission limits do not appear in the Title V Permit. However, the record keeping and reporting requirements in 40 CFR 60 Subpart GG have been modified and retained. These requirements will be discussed more in Sections V and VI of this narrative.

Both fuel oil storage tanks are subject to 40 CFR 60 Subpart Kb. However, because #2 fuel oil has such a low vapor pressure, they are only subject to the record keeping requirements in 40 CFR 60.116b(b).

Emission and Operating Standards: Both combustion turbines have allowable emission rates, in their PSD Permit, for PM, NOx, SO2, beryllium, and opacity. Since this facility was permitted after the Clean Air Act was amended in 1990, it is not required to have BACT limits for pollutants which were designated as HAPs in Section 112(g) of the Act. These HAPs were specifically exempted from PSD review in Section 112(b)(6) of the 1990 Amendments. Furthermore, EPA issued a guidance memo dated March 11, 1991 confirming this exemption. A copy of this guidance memo has been attached as part of the Title V application. Therefore, I recommend that the beryllium emission limit be removed from Hartwell Energy's Permit.

The allowable emission rates are as follows:

<u>Pollutant</u>	<u>Firing Natural Gas</u>	<u>Firing Fuel Oil</u>
NOx	25ppm	42ppm
SO2	--	0.05% sulfur content
CO	25ppm	25ppm
PM	0.0064 lb/MMBtu	0.0156 lb/MMBtu
opacity	10%	10%

D. Compliance Status: See Section VII.F.

E. Testing, Monitoring and Record Keeping: See Sections IV, V, and VI.

F. Operational Flexibility: See Section VII.A.

G. Permit Conditions:

- Condition 3.3.1 limits NOx, PM, CO, and opacity while burning fuel oil.
- Condition 3.3.2 limits NOx, PM, CO, and opacity while burning natural gas.
- Condition 3.3.3 limits the sulfur content of the fuel oil.
- Condition 3.3.4 limits the operation of the combustion turbines to a total of 5000 hours per year.

IV. Requirements For Testing (with Associated Record Keeping and Reporting)

- A. General Testing Requirements: The standard general requirements for testing have been included in the permit.
- B. Specific Testing Requirements: Initial performance tests, required by 40 CFR 60.8 and Air Quality Permit No. 4911-073-10941, were completed in 1994. Additional performance testing is not required by any applicable regulation. However, the permit does contain a condition that the Division at any time may require an emissions test to determine compliance with the emission limits identified in Part 3.0 using the test methods specified under Condition 4.1.3.

V. Requirements For Monitoring (with Associated Record Keeping and Reporting)

- A. General Monitoring Requirements: The standard general requirements for monitoring have been included in the permit.

Combustion Turbines H101 and H201 are subject to emissions limitations, contained in Air Quality Permit No. 4911-073-10941, for Particulate Matter (while burning natural gas and fuel oil) and Visible Emissions (while burning natural gas and while burning fuel oil). These limitations were established for Prevention of Significant Deterioration (PSD).

Method 9 (Visual Determination Of The Opacity Of Emissions From Stationary Sources) testing conducted on the turbines while burning fuel oil and while burning natural gas showed zero (0) percent Opacity. Additionally, performance testing for Particulate Matter was conducted while the turbines were firing fuel oil and the results indicated emission rates which were less than 20 percent of the allowable limitation of 0.0156 pounds per million Btu heat input. Based upon these test results, the unlikelihood of a violation, and the insignificant nature of these emissions, the determination was made that no monitoring (other than fuel usage record keeping) would be required for Particulate Matter and Opacity.

- B. Specific Monitoring Requirements:
 1. For turbines H101 and H201, ASTM Methods are specified for determining the fuel-bound nitrogen content of the fuel oil. The purpose of this requirement is to determine the fuel-bound Nitrogen content used to calculate the Nitrogen Oxides allowable limit contained in Condition 3.3.1.
 2. The sulfur content of the fuel oil is required to be determined using Method 19 procedures during any day oil is fired in the turbines. The purpose of this requirement is to monitor compliance with the limitation for fuel oil sulfur. Fuel sulfur content of the natural gas is determined by semiannual analysis and certification of the gas by the supplier.

3. The ratio of water to fuel being burned is required to be continuously monitored in order to determine if the Nitrogen Oxides emissions limitation for the turbines is exceeded. A correlation of water to fuel ratios with Nitrogen Oxides emissions was established during performance testing conducted from March 31 through April 6, 1994. This correlation gives the ratio of water to fuel which must be maintained in order to meet the emissions limitation.
 4. For turbines H101 and H201, the operating load of each turbine is required to be monitored to verify that the Carbon Monoxide (CO) emissions do not exceed 25 ppmvd. Performance tests at four load levels of 50 to 100% capacity conducted from April 3-7, 1994 indicated that CO emissions did not exceed this limit for either oil or gas. However, the results indicated that CO is inversely proportional to load, increasing with decreasing load. This trend was more evident for natural gas than fuel oil but the emissions limitation was adequately complied with at 50% capacity for both fuels. The turbines are peaking units and normally operate at full load only. By considering the normal operating mode of the turbines and the CO test results, it was decided that monitoring turbine load to comply with the load limitation of 50 percent capacity or above was sufficient periodic monitoring to verify compliance with respect to the CO limitation.
 5. For turbines H101 and H201, the hours of operation are required to be monitored to verify that the turbines do not, in any combination, operate more than 5,000 hours per calendar year. A meter has previously been installed to record the cumulation of hours of operation on each turbine.
- C. Associated Record Keeping and Reporting Requirements: Records, including identification of any deviations from applicable monitoring triggers, the cause of such occurrence, the corrective action taken, and the nitrogen content of oil and sulfur content of the gas or oil received are required to be kept by the Permittee and the reporting is required on a quarterly basis.

General requirements for the maintenance of all records for a period of five years are included in permit condition 5.3.2.

VI. Other Record Keeping and Reporting Requirements

- A. General Record Keeping and Reporting Requirements: The standard general requirements are included in the permit.
- B. Specific Record Keeping and Reporting Requirements: Hartwell Energy is required to maintain records of fuel consumption, both fuel oil and natural gas, in each combustion turbine in Condition 6.2.1.

Hartwell Energy is required to maintain records of the hours of operation of each combustion turbine in Condition 6.2.2.

Hartwell Energy is required to maintain records of the dimensions and capacity of the fuel oil storage tanks in Condition 6.2.3.

VII. Other Specific Requirements

A. Operational Flexibility

Operational flexibility does not need to be incorporated into this Title V Permit. The applicant did not include any alternative operating scenarios in their Title V Application.

B. Alternative Requirements

There are no alternative requirements that need to be incorporated into the Title V Permit.

C. Insignificant Activities

A list of insignificant activities is attached at the end of the Title V Permit. These insignificant emission units may also be seen in Sections 4.10 and 4.50 of the Title V permit application.

D. Temporary Sources

Hartwell Energy Facility has not requested to operate any temporary sources.

E. Short-Term Activities

Hartwell Energy Facility did not report any short-term activities.

F. Compliance Schedule/Progress Reports

The facility is in compliance with all Air Quality Regulations. Therefore, no compliance schedule or progress reports are necessary.

G. Emissions Trading

This facility is not involved in any emission trading programs besides being part of the Acid Rain Program.

H. Acid Rain Requirements

This facility is subject to requirements in Title IV of the Clean Air Act. They are subject to 40 CFR 72 (permits), 73 (sulfur dioxide), and 75 (monitoring). They are not subject to the nitrogen oxide provisions (40 CFR 76) of the Acid Rain regulations. 40 CFR 76 only applies to affected units which burn coal.

Hartwell Energy submitted a separate Phase II Permit Application (Application No. 10440, dated December 19, 1997) to satisfy the requirements of 40 CFR 72.30(b)(2). 40 CFR 72.50(a)(1) allows a complete Phase II Permit Application to be attached to the Title V Permit as part of the Permit. Hartwell Energy's Phase II Permit Application is attached to the Title V Permit as part of the Permit to ensure that all Acid Rain applicable requirements are incorporated into the Title V Permit.

I. Prevention of Accidental Releases - Not applicable

J. Stratospheric Ozone Protection Requirements

The standard permit condition pursuant to 40 CFR 82 Subpart F has been included in the Title V Permit. These Title VI requirements apply to all air conditioning and refrigeration units containing ozone-depleting substances regardless of the size of the unit or of the source. Since Hartwell Energy Facility has at least some air conditioners, chillers and refrigerators Subpart F is an applicable requirement.

Hartwell Energy does not service motor vehicles, so 40 CFR 82 Subpart B is not applicable.

K. Pollution Prevention

There are no pollution prevention provisions incorporated into this Title V Permit.

L. Specific Conditions - Not 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.

Closing Block: We have reviewed and recommend issuance of draft Permit No. 4911-147-0021-V-01-0

Program	Review Engineers	Dates	Review Managers	Dates
SSPP/ASU				
SSCP/ASU				
ISMP				
TOXICS				

Stationary Source Permitting Program Manager

Addendum to Narrative - Hartwell Energy

The public comment period for the draft Title V permit for Hartwell Energy Facility ended on May 22, 1998. Comments were received from EPA Region 4 and Hartwell Energy Facility. The public comment period actually began on April 1, 1998 when the public notice was first published in The Hartwell Sun newspaper. However, Hartwell Energy Facility ran the public notice three additional weeks (April 8, April 15, and April 22, 1998). Because each time the public notice was published it stated that there would be a 30-day public comment period, we waited until May 22 before proceeding.

EPA Region 4 submitted informal comments dated April 17, 1998. The comments are summarized below followed by a discussion of the comment and any changes made to the permit as a result.

1. EPA commented that Condition 3.3.4, which limits the combined hours of operation of the two combustion turbines to a total of 5,000 hours per calendar year, modifies condition 9 of Prevention of Significant Deterioration (PSD) permit 4911-073-10941. Since the PSD permit limited each combustion turbine to 2,500 hours per calendar year, EPA claimed that Condition 3.3.4 modifies a fundamental assumption of the BACT analysis, as well as relaxes a limiting condition on an emissions unit permitted pursuant to Title I.

EPA stated that Condition 3.3.4 must be revised to limit each combustion turbine to 2,500 hours per calendar year, to be consistent with the PSD applicable requirement or EPD must conduct a new BACT analysis consistent with the requirements of the State's NSR program.

- A. Since EPD and Hartwell Energy both do not want to reopen the BACT determination for these combustion turbines, the condition has been changed as EPA requested.
2. EPA commented that Permit Condition 11 from the State's Air Quality permit 4911-073-10941, covering Prevention of Significant Deterioration, was not included in the Title V permit. They stated that the Title V permit must be revised to include this applicable requirement.
 - A. Even though the referenced condition was in the PSD permit, this condition is not required under EPA's governing regulations (e.g., best available control technology, lowest achievable emission rate, or other applicable NSR emission limits), nor is it required under the terms of EPD's NSR program. White Paper #1 gives a State the discretion to remove such permit terms from the Title V permits (a more detailed explanation can be seen in the memo from Jimmy Johnston of EPD to Yolanda Adams of EPA Region 4). No changes have been made to the permit as a result of this comment.
3. EPA commented that Condition 4.1.3 (General Testing Requirements) needed a minor wording change to be more compatible with their Credible Evidence rule.
 - A. Their requested change would not significantly alter the meaning of the condition. However, since this is a permit template condition, a change could impact all other Title V permits. Therefore, there should be a clear and compelling reason to change a template condition if a change is to be made. There is none in this particular case, so no changes have been made to the permit as a result of this comment.
4. EPA commented that they did not like our language in Section 7.12, where existing permits, which are being superseded by the Title V permit, are revoked. EPA stated that they were in the process of

drafting clarifying guidance with respect to the “revocation” of PSD permits. In essence, EPA considers the PSD permit not to be “revoked” but rather is merged with the Title V permit.

- A. EPD will review the EPA guidance when it is issued. No changes have been made, at this time, to the permit as a result of this comment.
- 5. EPA commented that the NSPS emission standards for the combustion turbines should be cited even though the NO_x and SO₂ limits have been superseded by more stringent PSD limits.
 - A. The citation, "40 CFR 60.332 (subsumed)," has been added to Conditions 3.3.1a. and 3.3.2a. The citation, "40 CFR 60.333 (subsumed)," has been added to Condition 3.3.3.
- 6. EPA commented that Section 70.6(a)(1)(ii) of the part 70 regulations should included in the Hartwell Energy Title V permit. This section reads, “The permit shall state that, where an applicable requirement of the Act is more stringent than an applicable requirement of regulations promulgated under Title IV of the Act, both provisions shall be incorporated into the permit and shall be enforceable by the Administrator.”
 - A. This requirement has been added to the Acid Rain part of the Title V permit.

Hartwell Energy submitted comments dated May 12, 1998. The comments are summarized below followed by a discussion of the comment and any changes made to the permit as a result.

- 1. This comment is related to EPA's first comment above. Hartwell Energy commented that they do not want the BACT determination to be reopened for these combustion turbines. Therefore, they requested the hours of operation limit be changed back to the original 2500 hours for each turbine.
 - A. This change has been made to the Title V permit.
- 2. Hartwell Energy requested the use of an alternative method, ASTM D-3228, to determine the nitrogen content of the fuel oil. This method had previously been approved for this purpose by EPA Region 4 and EPD.
 - A. Condition 4.1.3 was changed to allow the use of ASTM D-3228 to determine the nitrogen content of the fuel oil.
- 3. Hartwell Energy commented that they should not have to report excess emissions, for NO_x, during startup and shutdown. The NO_x control, water injection, is not used below 40 MW because it could put the flame out at those low levels.
 - A. The definition of excess emissions, in this case, comes from 40 CFR 60 Subpart GG. In this regulation, affected facilities are required to report cases when the water-to-fuel ratio falls below the level used to demonstrate compliance with the NO_x standard. However, they are only required to demonstrate compliance with the NO_x standard (see 40 CFR 60.335(c)(2)) in the normal operating range of the turbine, including the minimum point and the peak load. Therefore, Hartwell Energy only must report

excess emissions which occur above the minimum normal operating point of the turbines. No changes have been made to the permit as a result of this comment.

4. Hartwell Energy commented that the reporting requirements in 5.3.1, which requires semi-annual reports, and 6.2.2, which requires quarterly reports, should be consistent.
 - A. Condition 5.3.1 has been changed to require quarterly reports to be consistent with Condition 6.2.2.
5. Hartwell Energy commented that the requirement to keep records for five years was excessive.
 - A. The requirement to keep records for five years is specifically required by Georgia Rule 391-3-1-.03(10)(d)1(i) and 40 CFR 70.6(a)(3)(ii)(B). No changes have been made to the permit as a result of this comment.
6. Hartwell Energy requested clarification of the term, "responsible official." They questioned whether a Plant Manager, a Manager of the Company, a Director of the Company, and/or a Vice-President of the Company would be considered a responsible official.
 - A. The term, "responsible official," is defined in 40 CFR 70.2. For Hartwell Energy, all of the positions described above would most likely satisfy the definition of responsible official.
7. Hartwell Energy commented that the requirement to report certain types of deviations, as described in Condition 6.1.2, within 7 days was excessive.
 - A. This requirement to report these deviations is taken from Georgia Rule 391-3-1-.02(6)(b)1(iv). This citation has been added to the Title V permit.

On June 23, 1998, we received an electronic message from EPA Region 4 approving the issuance of this Title V permit with the changes described above.