


Florida Department of  
Environmental Protection

Memorandum

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TO: Joseph Kahn, Director, DARM  
THROUGH: Trina L. Vielhauer, Chief, BAR   
FROM: Syed Arif, New Source Review Section  
DATE: November 12, 2008  
SUBJECT: Project No. 1010373-009-AC/PSD-FL-280A  
Shady Hills Power Company, LLC, Shady Hills Generating Station  
Combustion Turbine Heat Input Increases

Attached is the final Prevention of Significant Deterioration (PSD) permit revision, which allows increases for the three 170 megawatt (MW) simple cycle units [Emissions Unit (EU)-001, EU-002 and EU-003] from 1,612 to 1,704 million Btu per hour (MMBtu/hr) when firing natural gas and an increase from 1,806 to 1,889 MMBtu/hr when firing distillate oil. The increases are requested to correct estimates provided by the gas turbine vendor that underestimate the actual performance of the installed turbines. No physical changes are necessary to realize the requested heat input increases. No increase in the emissions standards (concentrations or mass emissions rates) are requested to accommodate the change. The applicant does not expect any increased utilization as a result of the change. The emissions units will continue to comply with all applicable provisions of the air construction and operation permits.

No comments were received from the EPA or the public. We recommend your approval of the attached final permit.

Attachments

JK/tv/sa

## FINAL DETERMINATION

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### PERMITTEE

Shady Hills Power Company, LLC  
120 Long Ridge Road  
Stamford, Connecticut 06927

### PERMITTING AUTHORITY

Florida Department of Environmental Protection  
Division of Air Resource Management  
Bureau of Air Regulation, New Source Review Section  
2600 Blair Stone Road, MS #5505  
Tallahassee, Florida 32399-2400

### PROJECT

Project No. 1010373-009-AC  
PSD Permit Revision No. PSD-FL-280A  
Shady Hills Generating Station

**Facility Location:** The applicant, Shady Hills Power Company, LLC operates the existing Shady Hills Generating Station which is located in Pasco County at 14240 Merchant Energy Way in Spring Hill, Florida.

**Purpose:** The purpose of this project is to revise the original air construction permit 1010373-001-AC/PSD-FL-280 and concurrently revise Title V air operation permit No. 1010373-006-AV to incorporate the specific conditions of air construction Permit No. 1010373-009-AC to allow increases for the three 170 megawatt (MW) simple cycle units (Emissions Unit (EU)-001, EU-002 and EU-003) from 1,612 to 1,704 million Btu per hour (MMBtu/hr) when firing natural gas and an increase from 1,806 to 1,889 MMBtu/hr when firing distillate oil. The increases are requested to correct estimates provided by the gas turbine vendor that underestimate the actual performance of the installed turbines. No physical changes are necessary to realize the requested heat input increases. No increase in the emissions standards (concentrations or mass emissions rates) are requested to accommodate the change. The applicant does not expect any increased utilization as a result of the change. The emissions units will continue to comply with all applicable provisions of the air construction and operation permits.

### NOTICE AND PUBLICATION

The Department distributed the Intent to Issue Permit package on September 16, 2008. The applicant published the Public Notice of Intent to Issue in The St. Petersburg Times on September 26, 2008. The Department received the proof of publication on October 3, 2008.

### COMMENTS

No comments on the Draft Permit were received from the public, the Department's Southwest District Office, the EPA Region 4 Office, or the applicant.

### CONCLUSION

The final action of the Department is to issue the permit as drafted.

**STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**NOTICE OF FINAL PERMIT**

In the Matter of an  
Application for Permit by:

Shady Hills Power Company, LLC  
120 Long Ridge Road  
Stamford, Connecticut 06927

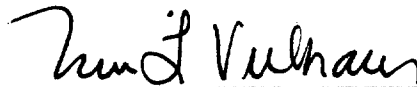
*Responsible Official:*  
Mr. Roy S. Belden, Vice President

Air Permit No. PSD-FL-280A  
Project No. 1010373-009-AC  
Shady Hills Generating Station  
Facility ID No. 1010373  
Combustion Turbine Heat Input  
Increases

The purpose of this project is to revise the original air construction permit 1010373-001-AC/PSD-FL-280 and concurrently revise Title V air operation permit No. 1010373-006-AV to incorporate the specific conditions of air construction Permit No. 1010373-009-AC/PSD-FL-280A to allow increases for the three 170 megawatt (MW) simple cycle units (Emissions Unit (EU)-001, EU-002 and EU-003) from 1,612 to 1,704 million Btu per hour (MMBtu/hr) when firing natural gas and an increase from 1,806 to 1,889 MMBtu/hr when firing distillate oil. The increases are requested to correct estimates provided by the gas turbine vendor that underestimate the actual performance of the installed turbines. No physical changes are necessary to realize the requested heat input increases. No increase in the emissions standards (concentrations or mass emissions rates) are requested to accommodate the change. The applicant does not expect any increased utilization as a result of the change. The emissions units will continue to comply with all applicable provisions of the air construction and operation permits.

This permit is issued pursuant to Chapter 403, Florida Statutes (F.S.). Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S. by filing a Notice of Appeal pursuant to Rule 9.110 of the Florida Rules of Appellate Procedure, with the Clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000); and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this order is filed with the Clerk of the Department.

Executed in Tallahassee, Florida



Trina L. Vielhauer, Chief  
Bureau of Air regulation

11/12/08

(Date)

**NOTICE OF FINAL PERMIT**

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**CERTIFICATE OF SERVICE**

The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Final Permit (including the Final Determination and the Final Permit) was sent by electronic mail (or a link to these documents made available electronically on a publicly accessible server) with received receipt requested before the close of business on 11/13/08 to the persons listed below.

Mr. Roy S. Belden, Shady Hills Power Company, LLC ([Roy.Belden@GE.com](mailto:Roy.Belden@GE.com))

Mr. Scott Osbourn, Golder Associates, Inc. ([SOsbourn@golder.com](mailto:SOsbourn@golder.com))

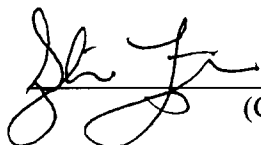
Ms. Cindy Zhang-Torres, Southwest District Office ([Cindy.Zhang-Torres@dep.state.fl.us](mailto:Cindy.Zhang-Torres@dep.state.fl.us))

Ms. Kathleen Forney, EPA Region 4 ([forney.kathleen@epa.gov](mailto:forney.kathleen@epa.gov))

Ms. Vickie Gibson, DEP-BAR ([victoria.gibson@dep.state.fl.us](mailto:victoria.gibson@dep.state.fl.us)) (for read file)

Clerk Stamp

**FILING AND ACKNOWLEDGMENT FILED**, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

  
\_\_\_\_\_  
(Clerk)

11/13/08  
(Date)



# Florida Department of Environmental Protection

Bob Martinez Center  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Charlie Crist  
Governor

Jeff Kottkamp  
Lt. Governor

Michael W. Sole  
Secretary

## PERMITTEE

Shady Hills Power Company, LLC  
120 Long Ridge Road  
Stamford, Connecticut 06927

*Responsible Official:*

Mr. Roy S. Belden, Vice President

Air Permit No. PSD-FL-280A  
Project No. 1010373-009-AC  
Shady Hills Generating Station  
Facility ID No. 1010373  
Combustion Turbine Heat Input  
Increases

## FACILITY AND LOCATION

This permit revises the original air construction Permit No. 1010373-001-AC/PSD-FL-280 and concurrently revises Title V air operation Permit No. 1010373-006-AV to allow nominal increases to the heat input rates for the three existing 170 megawatt (MW) simple cycle combustion turbines. The facility is located in Pasco County at 14240 Merchant Energy Way, Spring Hill, Florida. The UTM coordinates are Zone 17, 347 km East, and 3139 km North.

## STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.) and Title 40, Parts 60 and 63 of the Code of Federal Regulations (CFR).

Joseph Kahn, Director  
Division of Air Resource Management

11/12/08  
Effective Date

## AIR CONSTRUCTION PERMIT REVISIONS

This permitting action will revise the following specific conditions in Permit No. 1010373-001-AC/PSD-FL-280.

### SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

**8. Capacity:** The maximum heat input rates, based on the lower heating value (LHV) of each fuel to each unit (-001, -002, and -003), ambient conditions of 59°F temperature, 60% relative humidity, 100% load and 14.7 psi pressure, shall not exceed 1,704 million Btu per hour (MMBtu/hr) when firing natural gas, nor 1,889 MMBtu/hr when firing No. 2 or superior grade of distillate fuel oil. These maximum heat input rates will vary depending upon ambient conditions and the combustion turbine characteristics. Manufacturer's curves corrected for site conditions or equations for correction to other ambient conditions shall be provided to the Compliance Authority within 45 days of completing the initial compliance testing. [Rule 62-210.200(PTE), F.A.C.; and 1010373-009-AC/PSD-FL-280A]

**13. Maximum allowable hours:** The stationary gas turbines shall only operate up to 3,390 hours per unit, including an average of 1,000 hours on fuel oil per unit during any calendar year. No single combustion turbine shall operate more than 5,000 hours in a single year. [Rules 62-210.200(PTE) and 62-212.400(BACT), F.A.C.; 1010373-009-AC/PSD-FL-280A and 1010373-006-AV]

**19. Reduction Plan.** The permittee shall develop a NO<sub>x</sub> reduction plan when the hours of oil firing reach the 1,000 hours per year on any combustion turbine. This plan shall include a testing protocol designed to establish the maximum water injection rate and the lowest NO<sub>x</sub> emissions possible without affecting the actual performance of the gas turbine. The testing protocol shall set a range of water injection rates and attempt to quantify the corresponding NO<sub>x</sub> emissions for each rate and noting any problems with performance. Based on the test results, the plan shall recommend a new NO<sub>x</sub> emissions limiting standard and shall be submitted to the Department's Bureau of Air Regulation and Compliance Authority for review. If the Department determines that a lower NO<sub>x</sub> emissions standard is warranted for oil firing, this permit shall be revised. To date, not one single emissions unit has fired fuel oil for 1,000 hours in a year. [1010373-009-AC/PSD-FL-280A]

**29. Annual Compliance Tests.** Unless otherwise indicated, *annual* compliance tests shall be performed during every federal fiscal year (October 1 - September 30) pursuant to Rule 62-297.310(7), F.A.C., on each unit by using the following reference methods as described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. No other test methods may be used for compliance testing unless prior Departmental approval is received in writing. Additional compliance tests shall also be conducted for all pollutants, except for PM/PM<sub>10</sub> (VE surrogate), after any modification (and shake down period not to exceed 100 days after re-starting the combustion turbine) of the unit or air pollution control equipment and these tests are allowed to be conducted at a single load in lieu of the four loads.

- EPA Reference Method 9, "Visual Determination of the Opacity of Emissions from Stationary Sources".
- EPA Reference Method 10, "Determination of Carbon Monoxide Emissions from Stationary Sources". Compliance testing for CO may be conducted at less than capacity when compliance testing is conducted concurrent with the annual Relative Accuracy and Test Audit (RATA) testing for the NO<sub>x</sub> CEMS required pursuant to 40 CFR 75.
- EPA Reference Method 7E, "Determination of Oxides of Nitrogen Oxide Emissions from Stationary Gas Turbines."
- EPA Reference Method 18, 25 and/or 25A, "Determination of Volatile Organic Concentrations." Initial test only.

[1010373-009-AC/PSD-FL-280A; and 1010373-001-AC/PSD-FL-280 amendment]

Sylvia.livingston@dep.state.fl.us

Note: The attached document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: <<http://www.adobe.com/products/acrobat/readstep.html>> .

**Tracking:**

**Recipient**

- ✓ 'Roy.Belden@GE.com'
- ✓ 'SOsborn@golder.com'
- ✓ Zhang-Torres
- ✓ 'forney.kathleen@epa.gov'
- ✓ Gibson, Victoria
- ✓ Arif, Syed
- ✓ Walker, Elizabeth (AIR)
- ✓ 'abrams.heather@epamail.epa.gov'

**Delivery**

Delivered: 11/13/2008 2:51 PM

## Livingston, Sylvia

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**From:** Livingston, Sylvia  
**Sent:** Thursday, November 13, 2008 2:51 PM.  
**To:** 'Roy.Belden@GE.com'  
**Cc:** 'SOsbourn@golder.com'; Zhang-Torres; 'forney.kathleen@epa.gov'; Gibson, Victoria; Arif, Syed; Walker, Elizabeth (AIR); 'abrams.heather@epamail.epa.gov'  
**Subject:** SHADY HILLS GENERATING STATION; 1010373-009-AC (PSD-FL-280A)  
**Attachments:** 1010373-009-AC Final.pdf

Dear Sir/ Madam:

Attached is the official **Notice of Final Permit** for the project referenced below. Click on the link displayed below to access the permit project documents and send a "reply" message verifying receipt of the document(s) provided in the link; this may be done by selecting "Reply" on the menu bar of your e-mail software, noting that you can view the documents, and then selecting "Send". **We must receive verification that you are able to access the documents.** Your immediate reply will preclude subsequent e-mail transmissions to verify accessibility of the document(s).

**Click on the following link to access the permit project documents:**

[http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf\\_permit\\_zip\\_files/1010373.009.AC.F\\_pdf.zip](http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf_permit_zip_files/1010373.009.AC.F_pdf.zip)

**Owner/Company Name:** SHADY HILLS POWER COMPANY, L.L.C.

**Facility Name:** SHADY HILLS GENERATING STATION

**Project Number:** 1010373-009-AC/ PSD-FL-280A

**Permit Status:** FINAL

**Permit Activity:** CONSTRUCTION

**Facility County:** PASCO

**Processor:** Syed Arif

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Access these documents by clicking on the link provided above, or search for other project documents using the "*Air Permit Documents Search*" website at <http://www.dep.state.fl.us/air/eproducts/apds/default.asp>.

Permit project documents are addressed in this email may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible, and verify that they are accessible. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record. If you have any problems opening the documents or would like further information, please contact the Florida Department of Environmental Protection, Bureau of Air Regulation at (850)488-0114.



1010373-009-AC  
Final.pdf (755 ...)

Sylvia Livingston  
Bureau of Air Regulation  
Division of Air Resource Management (DARM)  
850/921-9506



**Livingston, Sylvia**

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**From:** Belden, Roy S (GE Comm Fin) [roy.belden@ge.com]  
**Sent:** Tuesday, November 18, 2008 10:08 AM  
**To:** Livingston, Sylvia  
**Subject:** RE: SHADY HILLS GENERATING STATION; 1010373-009-AC (PSD-FL-280A)

Dear Ms. Livingston,

Thank you for your e-mail. Shady Hills Power Company has received the final PSD permit project documents, and has been able to access them. Regards, Roy Belden

*Roy S. Belden*  
Shady Hills Power Company, LLC  
c/o GE Energy Financial Services  
120 Long Ridge Road  
Stamford, CT 06927  
203-357-6820  
[roy.belden@ge.com](mailto:roy.belden@ge.com)

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**From:** Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]  
**Sent:** Thursday, November 13, 2008 2:51 PM  
**To:** Belden, Roy S (GE Comm Fin)  
**Cc:** SOsbourn@golder.com; Zhang-Torres; forney.kathleen@epa.gov; Gibson, Victoria; Arif, Syed; Walker, Elizabeth (AIR); abrams.heather@epamail.epa.gov  
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**Owner/Company Name:** SHADY HILLS POWER COMPANY, L.L.C.  
**Facility Name:** SHADY HILLS GENERATING STATION  
**Project Number:** 1010373-009-AC/ PSD-FL-280A  
**Permit Status:** FINAL  
**Permit Activity:** CONSTRUCTION  
**Facility County:** PASCO  
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11/18/2008