

FACILITIES LEGEND				
ITEM NO	DESCRIPTION	LOCATION COORDINATES		REFERENCE LOCATION
		NORTH	EAST	
1	F.P.B.L. RENT-OF-WAY	N/A	N/A	
2	JEA TRANSMISSION CORRIDOR	N/A	N/A	
3	ACCESS ROAD	N/A	N/A	
4	LOOP ROAD	N/A	N/A	
5	SLIDE GATE	N/A	N/A	
6	SWING GATE	N/A	N/A	
7	FUEL GAS METERING STATION	N/A	N/A	
8	SUBSTATION AREA	N/A	N/A	
9	FUEL OIL STORAGE TANK (1,000,000 GALLONS)	N/A	N/A	
10A	WATER SUPPLY WELL	7670.00	56825.00	CL WELL
10B	WATER SUPPLY WELL	77801.82	57597.00	CL WELL
10C	WATER SUPPLY WELL	77843.00	567645.00	CL WELL
10D	WATER SUPPLY WELL	78128.00	57834.00	CL WELL
11	SHOP/STORAGE BUILDING	N/A	N/A	
12	WASTEWATER PUMPING STATION	N/A	N/A	
13	RAW WATER/FIRE WATER STORAGE TANK	N/A	N/A	
14	MECHANICAL EQUIPMENT BUILDING	N/A	N/A	
15	DEMINERALIZED WATER STORAGE TANK	N/A	N/A	
16	FUEL OIL UNLOADING AREA	N/A	N/A	
17	FUEL OIL UNLOADING PUMP AREA	N/A	N/A	
18	HYDROGEN STORAGE GAS AREA	N/A	N/A	
19	FUEL OIL STORAGE TANK SECONDARY CONTAINMENT	N/A	N/A	
20	STORM WATER DETENTION POND	N/A	N/A	
21	COMBUSTION TURBINE (CT)	N/A	N/A	
22	CT GENERATOR	N/A	N/A	
23	CT EXHAUST STACK (UNIT 1)	77788.26	57488.00	CL STACK
23	CT EXHAUST STACK (UNIT 2)	N/A	N/A	
23	CT EXHAUST STACK (UNIT 3)	N/A	N/A	
24	CT AIR INLET FILTER	N/A	N/A	
25	GENERATOR STEP-UP TRANSFORMER	N/A	N/A	
26	CT WATER INJECTION SKID	N/A	N/A	
27	CONTROL/ELECTRICAL BUILDING	N/A	N/A	
28	FUEL FORMER/NOX SKIDS	N/A	N/A	
29	CONTROL/SHARED SERVICES BUILDING	N/A	N/A	
30	UNIT AUXILIARY TRANSFORMER	N/A	N/A	
31	EXHAUST DUCT SILENCER	N/A	N/A	
32	FIRE PROTECTION FOAM HOUSE	N/A	N/A	
33	WASH WATER SKID	N/A	N/A	
34	MISCELLANEOUS DRAIN TANK	N/A	N/A	
35	CT CO2 FIRE PROTECTION SKID	N/A	N/A	
36	FALSE START DRAIN TANK	N/A	N/A	
37	LIQUID FUEL/ATOMIZING AIR MODULE	N/A	N/A	
38	CT ACCESSORY MODULE	N/A	N/A	
39	GENERATOR COMPARTMENT	N/A	N/A	
40	FIRE WATER DELUGE HOUSE	N/A	N/A	
41	MAINTENANCE AREA	N/A	N/A	
42	PIPE TRENCH	N/A	N/A	
43	SLEEPER PIPE RACK	N/A	N/A	
44	OIL WATER SEPARATOR	N/A	N/A	
45	STORM WATER DETENTION POND DISCHARGE STRUCTURE	N/A	N/A	
46	COOLER	N/A	N/A	
47	PERCOLATION POND	N/A	N/A	
48	SEPTIC TANK AND DRAINFIELD DETAIL	N/A	N/A	
49	EXISTING ROAD	N/A	N/A	
50	TEMPORARY CONSTRUCTION ACCESS ROAD	N/A	N/A	
51	FUTURE WATER TREATMENT EQUIPMENT EXPANSION	N/A	N/A	
52	PROPERTY BOUNDARY	N/A	N/A	
53	EASEMENT BOUNDARY	N/A	N/A	
54	CHAIN LINK SECURITY FENCE	N/A	N/A	
55	PERIMETER FENCE	N/A	N/A	
56	LIME OIL STORAGE AREA	N/A	N/A	
57	BARBED WIRE SITE PERIMETER FENCE	N/A	N/A	
58	HEAT RECOVERY STEAM GENERATOR	N/A	N/A	
59	COOLING TOWER	N/A	N/A	
60	CIRCULATING WATER PUMPS	N/A	N/A	
61	STEAM TURBINE GENERATOR BUILDING	N/A	N/A	
62	ABOVE GROUND PIPE RACK	N/A	N/A	
63	CONDENSATE STORAGE TANK	N/A	N/A	
64	CONDENSATE STORAGE TANK	N/A	N/A	
65	WASTEWATER DUMP	N/A	N/A	
66	CIRCULATING WATER ACID TANK	N/A	N/A	
67	CIRCULATING WATER HYPOCHLORITE TANK	N/A	N/A	
68	AMMONIA STORAGE TANK	N/A	N/A	

GENERAL LEGEND	
	BENCHMARK
	FUTURE FACILITY
	WETLANDS
	CYPRESS (ZONE 2) AREA
	ASPHALT
	CRUSHED ROCK SURFACING
	HERBACEOUS (ZONE 1) AREA
	UPLAND SEEDING AREA
	RESTORATION MITIGATION AREA
	GEOWEB

NOT TO BE USED FOR CONSTRUCTION

<p>DATE: 09-13-2000 TIME: 11:00 AM DRAWN BY: [Name]</p>	<p>REVISIONS AND REVISIONS:</p> <table border="1"> <tr><th>NO</th><th>DATE</th><th>REVISIONS AND REVISIONS</th></tr> <tr><td>C</td><td>10-13-2000</td><td>GENERAL REVISIONS</td></tr> <tr><td>B</td><td>09-19-2000</td><td>GENERAL REVISIONS</td></tr> <tr><td>A</td><td>09-05-2000</td><td>ISSUED FOR REVIEW</td></tr> </table>	NO	DATE	REVISIONS AND REVISIONS	C	10-13-2000	GENERAL REVISIONS	B	09-19-2000	GENERAL REVISIONS	A	09-05-2000	ISSUED FOR REVIEW	<p>SCALE: 1"=100'</p> <p>100' 50' 0' 100' 200'</p>	<p>BLACK & VEATCH JEA BRANDY BRANCH JEA COMBINED CYCLE PROJECT</p>	<p>PROJECT: 97990-DS-0001 DRAWING NUMBER: C</p>
NO	DATE	REVISIONS AND REVISIONS														
C	10-13-2000	GENERAL REVISIONS														
B	09-19-2000	GENERAL REVISIONS														
A	09-05-2000	ISSUED FOR REVIEW														

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

OFFICIAL USE

7001 0320 0001 3692 1902

Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	

Postmark
Here

1. Mr. James M. Chansler
Se V.P. Operations and Maintenance
JEA
St. Johns River Power Park
St. or St. 21 West Church Street
Cit Jacksonville, Florida 32202

PS Form 3800, January 2001 See Reverse for Instructions

0310485-015-AC

7SD-7L-310E

Already scanned

THE FLORIDA TIMES-UNION
Jacksonville, Fl
Affidavit of Publication

Florida Times-Union

RECEIVED

OCT 14 2005

BUREAU OF AIR REGULATION

J.E.A./ENVIRONMENTAL
ATTN: KASEY CLEGHORN
21 W CHURCH ST T-8
JACKSONVILLE FL 32202

REFERENCE: 0334984

R080257 PUBLIC NOTICE OF INT

State of Florida
County of Duval

Before the undersigned authority personally appeared Tiffany Powell who on oath says she is a Legal Advertising Representative of The Florida Times-Union, a daily newspaper published in Jacksonville in Duval County, Florida; that the attached copy of advertisement is a legal ad published in The Florida Times-Union. Affiant further says that The Florida Times-Union is a newspaper published in Jacksonville, in Duval County, Florida, and that the newspaper has heretofore been continuously published in Duval County, Florida each day, has been entered as second class mail matter at the post office in Jacksonville, in Duval County, Florida for a period of one year preceeding the first publication of the attached copy of advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission, or refund for the purpose of securing this advertisement for publication in said newspaper.

PUBLISHED ON: 09/25

FILED ON: 09/25/05

Name: Tiffany Powell Title: Legal Advertising Representative
In testimony whereof, I have hereunto set my hand and affixed my of seal, the day and year aforesaid.

NOTARY:



TWILLA SHIPP
Notary Public, State of Florida
My comm. expires May 13, 2006
Comm. No. DD 117248

PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT MODIFICATION

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DEP File No. PSD-FL-310 (PA 00-43)

JEA
Brandy Branch Generating Station
Duval County

The Department of Environmental Protection (Department) gives notice of its intent to issue a PSD Permit Modification to Brandy Branch Generating Station, located near Baldwin City, Duval County. The permit modification allows for Units 2 and 3 to operate on natural gas down to loads of 65 gross megawatts. This is an existing facility and a new determination of Best Availability Control Technology (BACT) was not required. The applicant's mailing address is: 21 West Church Street, Jacksonville, FL 32202-3139. In support of the request, JEA has provided test results for its simple cycle Unit 1 (an identical, co-located combustion turbine), under tests which were authorized by the Department October of 2004, which indicates that CO levels can be consistently maintained under 11 ppmvd @ 15% O₂ while operating at 65 megawatts. Currently, the permit limits CO emissions to 14 ppmvd @ 15% O₂, while firing natural gas and minimizes operation below 50% output (approximately 90 megawatts) as a result of expected increases in CO while operating at loads below 50%.

An air quality impact analysis was not required. The Department will issue the Final Permit with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions. The Department will accept written comments concerning the proposed permit issuance action for a period of 14 (fourteen) days from the date of publication of this Public Notice of Intent to Issue PSD Permit Modification. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency action or proposed action; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Florida Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida, 32301
Telephone: (850) 488-1344
Fax: (850) 922-6979


Florida Department of Environmental Protection
Northeast District
Suite 200B, 7825 Baymeadows Way
Jacksonville, Florida 32256
Telephone: (904) 448-4300


The complete project file includes the application, Draft permit, and the information submitted by the Responsible Official, exclusive of confidential records under Section 403.111, F.S. Interested persons may review specific details of this project by contacting the Administrator, North Permitting Section, at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114, for additional information.

Florida Department of
Environmental Protection

Memorandum

TO: Michael G. Cooke

THRU: Trina Vielhauer 
J. K. Pennington

FROM: Michael P. Halpin 

DATE: May 17, 2004

SUBJECT: JEA - Brandy Branch Generating Station
PSD Permit Modification – Very low sulfur oil and hours of operation
DEP File No. PP 00-43 (PSD-FL-310)

Attached is the final permit modification relative to JEA's Brandy Branch PSD permit.

This is an existing facility which is currently in the process of modifying two of its three combustion turbines for combined cycle operation. Although natural gas is the primary fuel for all three CT's, the facility is also allowed to combust small amounts of low sulfur oil (0.05%) for limited time periods. JEA has now asked for permission to combust a lower sulfur oil (0.0065%) for longer periods of time. A review supports the applicant's contention that the ambient air quality standards will be met, and no PSD review is triggered, eliminating the requirement for a BACT Determination.

Notice was published in the Florida Times-Union on April 30, 2004. No comments were received.

I recommend your approval.

Attachments

/mph



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

May 17, 2004

Mr. James M. Chandler, P.E., D.P.A.
Vice President, Operations and Maintenance
JEA
21 West Church Street
Jacksonville, Florida 32202

Re: DEP File No. 0310485-007-AC; Modification of Permit No. PSD-FL-310 (PA 00-43)
Brandy Branch Generating Station / Duval County

The applicant, JEA, applied on March 11, 2004, to the Department for a modification to PSD permit number PSD-FL-310 for its Brandy Branch Generating Station located in Duval County. The modification is to clarify the allowable fuels and associated hours of use, including provisions for the use of very, very low sulfur oil (0.0065% sulfur). The Department has reviewed the modification request. The referenced permit is hereby modified as follows:

III. Emissions Unit(s) Specific Conditions

Applicable Standards And Regulations (Specific Condition 14. rewritten in entirety):

- 14.A. Allowable fuels: The facility is authorized to burn any combination of natural gas (2.0 grains sulfur / 100 scf), low sulfur fuel oil (0.05% sulfur) and lower sulfur fuel oil (0.0065% sulfur). The combinations of these fuels are subject to the hour limitations and record-keeping requirements set forth in 14.B. and 14.C. below. Unless otherwise authorized by this permit, CT operation below 50% output shall be limited to 2 hours during each calendar day.
- 14.B. Hours of operation: All units (combined and simple cycle) are authorized to operate 8760 hours per year while firing natural gas (2.0 grains sulfur / 100scf). The combined cycle units are authorized to operate up to a combined maximum of 576 actual plus "equivalent hours" per consecutive 12-month period while firing 0.05% sulfur oil OR a combined maximum of 1478 actual plus "equivalent hours" while firing 0.0065%, sulfur oil per consecutive 12-month period, whichever occurs first. The simple cycle unit is authorized to operate up to a maximum of 750 actual plus "equivalent hours" per consecutive 12-month period, while firing either 0.05% or .0065% sulfur oil, whichever occurs first. Tracking of "equivalent hours" shall conform with and be recorded as defined in paragraph 14C. Additionally, the following requirements shall apply:
1. In the event that any of the 3 emission units (simple or combined cycle) fires No. 2 distillate fuel oil (0.05% sulfur) during a calendar day, that unit shall be limited to 16 hours of daily operation on any fuel. Additionally, the other 2 units shall not be fired on any of the allowable fuels for that calendar day.
 2. In the event that the simple cycle unit fires lower sulfur oil (0.0065% sulfur) during any calendar day, but for 8 hours or less, the combined cycle units may fire any combination of lower sulfur oil (0.0065% sulfur) or natural gas (2 grains / 100 scf) during that calendar day.
 3. In the event that the simple cycle unit fires lower sulfur fuel oil (0.0065% sulfur) for more than 8 hours during a calendar day, it shall be allowed 24 hours of daily operation while the combined cycle units shall not be fired on any fuel for the calendar day.

14.C. Record keeping requirements and fuel switching:

Upon prior written notification, JEA may switch between firing 0.05% or 0.0065% sulfur oil on a calendar day basis (i.e. switching is not authorized within any calendar day). A record shall be made every day for each emission unit documenting: the fuel type actually used, the number of actual hours of firing each fuel type, and
"More Protection, Less Process"

(for the hours when any oil is fired) the "equivalent hours" for the fuel oil which was not fired. The following shall be used to determine the "equivalent hours": each actual hour of combustion of 0.05% sulfur distillate oil shall equate to 2.6 "equivalent hours" of lower sulfur oil (0.0065% sulfur) combustion and each actual hour of firing lower sulfur oil (0.0065% sulfur) shall equate to 0.39 "equivalent hours" of 0.05% sulfur oil combustion.


At the end of each calendar month, the total number of "equivalent hours" plus actual hours shall be determined. A running total shall be maintained in order to ensure compliance with Condition 14.B. above.

[Applicant Request, Rule 62-210.200, F.A.C. (Definitions - Potential Emissions)]

A copy of this letter shall be filed with the referenced permit and shall become part of the permit. This permit modification is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order (permit modification) has the right to seek judicial review of it under Section 120.68, F.S., by filing a notice of appeal under 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 must be filed within thirty days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.


Michael G. Cooke, Director
Division of Air Resources
Management

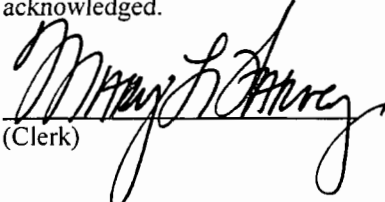
CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this permit modification was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 5/18/04 to the person(s) listed:

James M. Chandler, JEA *
N. Bert Gianazza, P.E., JEA
Gregg Worley, EPA
John Bunyak, NPS
Chris Kirts, NED
James L. Manning, P.E. RESD
Kyle Lucas, A.Q.S., Black & Veatch
Hamilton S. Oven, DEP-Siting

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.


(Clerk) 5/18/04
(Date)

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF RETURN ADDRESS
 FOUND AT BOTTOM LINE

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
 Mr. James M. Chandler, P.E., D.P.A.
 Vice President, Operations and
 Maintenance
 JEA
 21 West Church Street
 Jacksonville, Florida 32202

COMPLETE THIS SECTION ON DELIVERY

A. Signature Agent Addressee
J. Richardson

B. Received by (Printed Name) *J. Richardson* C. Date of Delivery *5/21/04*

D. Is delivery address different from item 1? Yes No
 If YES, enter delivery address below:

3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

2. Article Number 7000 1670 0013 3109 8437
 (Transfer from service label)

PS Form 3811, August 2001 Domestic Return Receipt 102595-02-M-1540

**U.S. Postal Service
 CERTIFIED MAIL RECEIPT
 (Domestic Mail Only; No Insurance Coverage Provided)**

7000 1670 0013 3109 8437

Postage	\$	Postmark Here
Certified Fee		
Return Receipt Fee (Endorsement Required)		
Restricted Delivery Fee (Endorsement Required)		
Total Postage & Fees	\$	

Sent To
 Mr. James M. Chandler
 Street, Apt. No., or PO Box No.
 21 West Church Street
 City, State, ZIP+4
 Jacksonville, Florida 32202

JEA

RECEIVED

MAY 13 2004

BUREAU OF AIR REGULATION

Memorandum

To: ~~Bert Gianazza~~ → Mike Halpin

CC:

From: Dave English

Date: 5/11/2004

Re: Advertisement Proof of Publication

Attached is the proof of publication for the ad titled, "Public Notice of Intent to Issue PSD Permit Modification" for Brandy Branch. The ad was published on 05/04/04.

Feel free to contact me if you have any questions or need any further assistance.

Dave English
665-5198
englda@jea.com

PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT MODIFICATION

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DEP File No. PSD-FL-310 (PA 00-43)

JEA
Brandy Branch Generating Station
Duval County

The Department of Environmental Protection (Department) gives notice of its intent to issue a PSD Permit Modification to Brandy Branch Generating Station, located near Baldwin City, Duval County. The permit modification clarifies the allowable fuels and associated hours of use, including providing for the use of very low sulfur oil (0.0065% sulfur). This is an existing facility, which currently combusts natural gas and 0.05% sulfur distillate fuel oil. A new determination of Best Available Control Technology (BACT) was not required. The applicant's mailing address is: 21 West Church Street, Jacksonville, FL 32202-3139.

In addition to clarifying the amount of sulfur within the natural gas which is combusted at the facility, the applicant wishes to combust distillate oil with a sulfur content (0.0065%) less than currently permitted (0.05%). In exchange for this reduction in sulfur content, the applicant requests approval for an increase in the amount of hours which distillate oil may be fired. Such a trade-off provides the Department with reasonable assurance that no significant increases of regulated pollutants will occur.

An air quality impact analysis was not required. The Department will issue the Final Permit with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of 14 (fourteen) days from the date of publication of this Public Notice of Intent to Issue PSD Permit Modification. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Florida Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Dr, Suite 4
Tallahassee, Florida, 32301
Telephone: (850) 488-1344
Fax: (850) 922-6979

Florida Department of Environmental Protection
Northeast District
Suite 200B, 7825 Baymeadows Way
Jacksonville, Florida 32256
Telephone: (904) 448-4300

The complete project file includes the application, Draft permit, and the information submitted by the Responsible Official, exclusive of confidential records under Section 403.111, F.S. Interested persons may review specific details of this project by contacting the Administrator, North Permitting Section, at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114, for additional information.

THE FLORIDIA TIMES-UNION Jacksonville, Fl
Affidavit of Publication

Florida Times-Union

RECEIVED

MAY 13 2004

J. E. A. / ENVIRONMENTAL
ATTN: DAVE ENGLISH
21 W CHURCH ST T
JACKSONVILLE-FL 32202

BUREAU OF AIR REGULATION

REFERENCE: 0334984

R041242 Public Notice

State of Florida
County of Duval

Before the undersigned authority personally appeared Kimalete Frazier who on oath says she is a Legal Advertising Representative of The Florida Times-Union, a daily newspaper published in Jacksonville in Duval County, Florida; that the attached copy of advertisement is a legal ad published in The Florida Times-Union. Affiant further says that The Florida Times-Union is a newspaper published in Jacksonville, in Duval County, Florida, and that the newspaper has heretofore been continuously published in Duval County, Florida each day, has been entered as second class mail matter at the post office in Jacksonville, in Duval County, Florida for a period of one year preceeding the first publication of the attached copy of advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission, or refund for the purpose of securing this advertisement for publication in said newspaper.

PUBLISHED ON: 04/30

FILED ON: 05/04/04

Name: Kimalete Frazier Title: Legal Advertising R
In testimony whereof, I have hereunto set my hand and a seal, the day and year aforesaid.

NOTARY: *[Signature]* TWILLA SHIPP



Notary Public, State of Florida
My comm. expires May 13, 2006
Comm. No. DD 117248

P.E. Certification Statement

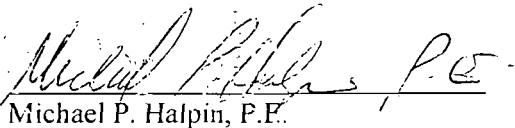
JEA
Brandy Branch Generating Station
Duval County

DEP File No.: PA 00-43 (PSD-FL-310)
Facility ID No.: 0310485

Project: PSD Permit Modification – Very low sulfur oil and hours of operation

I HEREBY CERTIFY that the engineering features described in the above referenced application and related additional information submittals, if any, and subject to the proposed permit conditions, provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including but not limited to the electrical, mechanical, structural, hydrological, and geological features).

(Seal)



Michael P. Halpin, P.E.
Registration Number: 31970

4-15-04
Date

Permitting Authority:

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

Telephone: 850/488-0114
Fax: 850/922-6979

Florida Department of
Environmental Protection

Memorandum

TO: Trina Vielhauer

THRU: J. K. Pennington *JKP*

FROM: M. P. Halpin *MH*

DATE: April 15, 2004

SUBJECT: JEA
PSD Permit Modification – Very low sulfur oil and hours of operation
DEP File No. PP 00-43 (PSD-FL-310)

Attached is the public notice package for JEA's Brandy Branch permit modifications. This is an existing facility which is currently in the process of modifying two of its three combustion turbines for combined cycle operation. Although natural gas is the primary fuel for all three CT's, the facility is also allowed to combust small amounts of low sulfur oil (0.05%) for limited time periods. JEA has now asked for permission to combust a lower sulfur oil (0.0065%) for longer periods of time.

A preliminary review supports the applicant's contention that the ambient air quality standards will be met, and no PSD review is triggered, eliminating the requirement for a BACT Determination.

I recommend your approval.

JKP/mph

Attachments



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

April 15, 2004

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. James M. Chandler, P.E., D.P.A.
Vice President, Operations and Maintenance
JEA
21 West Church Street
Jacksonville, Florida 32202

Re: DEP File No. 0310485-007-AC; Modification of Permit No. PSD-FL-310 (PA 00-43)
Brandy Branch Generating Station / Duval County

Dear Mr. Chandler:

Enclosed is one copy of the Draft PSD Permit Modification relative to JEA's request for a permit modification which clarifies the allowable fuels and associated hours of use, including provisions for the use of very low sulfur oil (0.0065% sulfur). The facility is located near Baldwin City in Duval County.

The Public Notice of Intent to Issue PSD Permit Modification must be published one time only, as soon as possible, in the legal advertisement section of a newspaper of general circulation in the area affected, pursuant to the requirements Chapter 50, Florida Statutes. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within seven days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit.

Please submit any written comments you wish to have considered concerning the Department's proposed action to J. K. Pennington, P.E., Administrator, North Permitting Section at the above letterhead address. If you have any other questions, please contact Michael P. Halpin, P.E. at 850/921-9519.

Sincerely,

Trina Vielhauer, Chief,
Bureau of Air Regulation

TV/mph

Enclosures

"More Protection, Less Process"

Printed on recycled paper.

In the Matter of an
Application for Permit by:

James M Chandler, Vice President Operations & Maintenance
JEA
21 West Church Street
Jacksonville, Florida 32202-3139

DEP File No. PSD-FL-310 (PA 00-43)

INTENT TO ISSUE PSD PERMIT MODIFICATION

The Department of Environmental Protection (Department) gives notice of its intent to issue a PSD Permit Modification (copy of Draft permit attached) for the proposed project, detailed in the application specified above and for the reasons stated below.

The applicant, James M. Chandler, Vice President Operations & Maintenance, JEA, applied on March 11, 2004, to the Department for a PSD Permit Modification for its Brandy Branch Station, located near Baldwin City, Duval County. The request is for a permit modification which clarifies the allowable fuels and associated hours of use, including provisions for the use of very low sulfur oil (0.0065% sulfur).

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, 62-212 and 40 CFR 52.21. The above actions are not exempt from permitting procedures. The Department has determined that a PSD Permit Modification is required to revise the permit with respect to changes in fuel as well as hours of use.

The Department intends to issue this PSD Permit Modification based on the belief that reasonable assurances have been provided to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. and 40 CFR 52.21.

Pursuant to Section 403.815, F.S., and Rule 62-110.106(7)(a)1., F.A.C., you (the applicant) are required to publish at your own expense the enclosed Public Notice of Intent to Issue PSD Permit Modification. The notice shall be published one time only in the legal advertisement section of a newspaper of general circulation in the area affected. Rule 62-110.106(7)(b), F.A.C., requires that the applicant cause the notice to be published as soon as possible after notification by the Department of its intended action. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 850/488-0114; Fax 850/ 922-6979). You must provide proof of publication within seven days of publication, pursuant to Rule 62-110.106(5), F.A.C. No permitting action for which published notice is required shall be granted until proof of publication of notice is made by furnishing a uniform affidavit in substantially the form prescribed in section 50.051, F.S. to the office of the Department issuing the permit. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rules 62-110.106(9) & (11), F.A.C.

The Department will issue the final permit with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of 14 (fourteen) days from the date of publication of Public Notice of Intent to Issue PSD Permit Modification. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation is not available in this proceeding.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

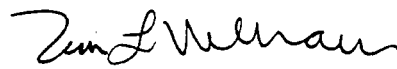
The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The

name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.



Trina Vielhauer, Chief
Bureau of Air Regulation

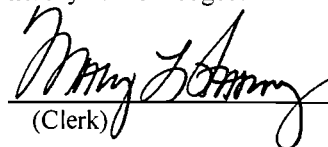
CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Intent to Issue PSD Permit Modification (including the Public Notice of Intent to Issue PSD Permit Modification and the Draft PSD Permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 4/22/04 to the person(s) listed:

James M. Chandler, JEA *
N. Bert Gianazza, P.E., JEA
Gregg Worley, EPA
John Bunyak, NPS
Chris Kirts, NED
James L. Manning, P.E. RESD
Kyle Lucas, A.Q.S., Black & Veatch
Hamilton S. Oven, DEP-Siting

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.



(Clerk)

4/22/04
(Date)

PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT MODIFICATION

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP File No. PSD-FL-310 (PA 00-43)

JEA
Brandy Branch Generating Station
Duval County

The Department of Environmental Protection (Department) gives notice of its intent to issue a PSD Permit Modification to Brandy Branch Generating Station, located near Baldwin City, Duval County. The permit modification clarifies the allowable fuels and associated hours of use, including providing for the use of very low sulfur oil (0.0065% sulfur). This is an existing facility, which currently combusts natural gas and 0.05% sulfur distillate fuel oil. A new determination of Best Available Control Technology (BACT) was not required. The applicant's mailing address is: 21 West Church Street, Jacksonville FL 32202-3139.

In addition to clarifying the amount of sulfur within the natural gas which is combusted at the facility, the applicant wishes to combust distillate oil with a sulfur content (0.0065%) less than currently permitted (0.05%). In exchange for this reduction in sulfur content, the applicant requests approval for an increase in the amount of hours which distillate oil may be fired. Such a trade-off provides the Department with reasonable assurance that no significant increases of regulated pollutants will occur.

An air quality impact analysis was not required. The Department will issue the Final Permit with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of 14 (fourteen) days from the date of publication of this Public Notice of Intent to Issue PSD Permit Modification. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of

NOTICE TO BE PUBLISHED IN THE NEWSPAPER

April 15, 2004

Mr. James M. Chandler, P.E., D.P.A.
Vice President, Operations and Maintenance
JEA
21 West Church Street
Jacksonville, Florida 32202

Re: DEP File No. 0310485-007-AC; Modification of Permit No. PSD-FL-310 (PA 00-43)
Brandy Branch Generating Station / Duval County

The applicant, JEA, applied on March 11, 2004, to the Department for a modification to PSD permit number PSD-FL-310 for its Brandy Branch Generating Station located in Duval County. The modification is to clarify the allowable fuels and associated hours of use, including provisions for the use of very, very low sulfur oil (0.0065% sulfur). The Department has reviewed the modification request. The referenced permit is hereby modified as follows:

III. Emissions Unit(s) Specific Conditions

Applicable Standards And Regulations (Specific Condition 14. rewritten in entirety):

- 14.A. Allowable fuels: The facility is authorized to burn any combination of natural gas (2.0 grains sulfur / 100 scf), low sulfur fuel oil (0.05% sulfur) and lower sulfur fuel oil (0.0065% sulfur). The combinations of these fuels are subject to the hour limitations and record-keeping requirements set forth in 14.B. and 14.C. below. Unless otherwise authorized by this permit, CT operation below 50% output shall be limited to 2 hours during each calendar day.
- 14.B. Hours of operation: All units (combined and simple cycle) are authorized to operate 8760 hours per year while firing natural gas (2.0 grains sulfur / 100scf). The combined cycle units are authorized to operate up to a combined maximum of 576 actual plus "equivalent hours" per consecutive 12-month period while firing 0.05% sulfur oil OR a combined maximum of 1478 actual plus "equivalent hours" while firing 0.0065%, sulfur oil per consecutive 12-month period, whichever occurs first. The simple cycle unit is authorized to operate up to a maximum of 750 actual plus "equivalent hours" per consecutive 12-month period, while firing either 0.05% or .0065% sulfur oil, whichever occurs first. Tracking of "equivalent hours" shall conform with and be recorded as defined in paragraph 14C. Additionally, the following requirements shall apply:
1. In the event that any of the 3 emission units (simple or combined cycle) fires No. 2 distillate fuel oil (0.05% sulfur) during a calendar day, that unit shall be limited to 16 hours of daily operation on any fuel. Additionally, the other 2 units shall not be fired on any of the allowable fuels for that calendar day.
 2. In the event that the simple cycle unit fires lower sulfur oil (0.0065% sulfur) during any calendar day, but for 8 hours or less, the combined cycle units may fire any combination of lower sulfur oil (0.0065% sulfur) or natural gas (2 grains / 100 scf) during that calendar day.
 3. In the event that the simple cycle unit fires lower sulfur fuel oil (0.0065% sulfur) for more than 8 hours during a calendar day, it shall be allowed 24 hours of daily operation while the combined cycle units shall not be fired on any fuel for the calendar day.
- 14.C. Record keeping requirements and fuel switching:
- Upon prior written notification, JEA may switch between firing 0.05% or 0.0065% sulfur oil on a calendar day basis (i.e. switching is not authorized within any calendar day). A record shall be made every day for each emission unit documenting: the fuel type actually used, the number of actual hours of firing each fuel type, and

DRAFT

(for the hours when any oil is fired) the "equivalent hours" for the fuel oil which was not fired. The following shall be used to determine the "equivalent hours": each actual hour of combustion of 0.05% sulfur distillate oil shall equate to 2.6 "equivalent hours" of lower sulfur oil (0.0065% sulfur) combustion and each actual hour of firing lower sulfur oil (0.0065% sulfur) shall equate to 0.39 "equivalent hours" of 0.05% sulfur oil combustion.

At the end of each calendar month, the total number of "equivalent hours" plus actual hours shall be determined. A running total shall be maintained in order to ensure compliance with Condition 14.B. above.

[Applicant Request, Rule 62-210.200, F.A.C. (Definitions - Potential Emissions)]

A copy of this letter shall be filed with the referenced permit and shall become part of the permit. This permit modification is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order (permit modification) has the right to seek judicial review of it under Section 120.68, F.S., by filing a notice of appeal under 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 must be filed within thirty days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.

Michael G. Cooke, Director
Division of Air Resources
Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this permit modification was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on _____ to the person(s) listed:

- James M. Chandler, JEA *
- N. Bert Gianazza, P.E., JEA
- Gregg Worley, EPA
- John Bunyak, NPS
- Chris Kirts, NED
- James L. Manning, P.E. RESD
- Kyle Lucas, A.Q.S., Black & Veatch
- Hamilton S. Oven, DEP-Siting

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

(Clerk)

(Date)

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

**TECHNICAL EVALUATION
AND
PRELIMINARY DETERMINATION**

JEA Brandy Branch Generating Station

Use of Very Low Sulfur Fuel Oil
And Related Hours of Operation

Duval County

0310485-007-AC



Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation
North Permitting Section

April 15, 2004

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

1. GENERAL INFORMATION

1.1 APPLICANT NAME AND ADDRESS

JEA
 Brandy Branch Generating Station
 21 West Church Street
 Jacksonville, Florida 32202-3139

Authorized Representative: James M. Chandler, Vice President, Operations & Maintenance

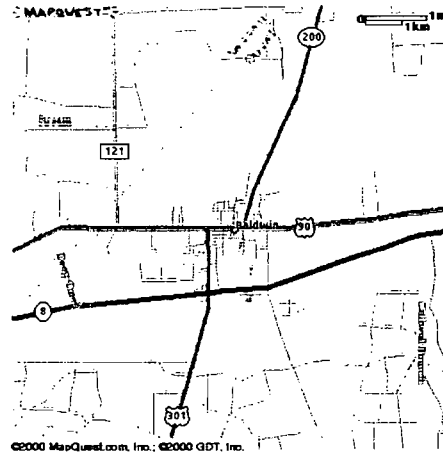
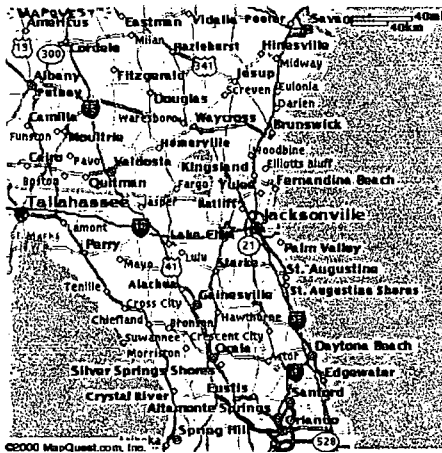
1.2 REVIEWING AND PROCESS SCHEDULE

March 11, 2004 Received permit application and fee
 March 11, 2004 Application complete

2. FACILITY INFORMATION

2.1 FACILITY LOCATION

The JEA Brandy Branch Facility is located approximately 1 mile northeast of Baldwin City, Duval County. This site is approximately 34 kilometers southeast and 127 kilometers southwest of the Okefenokee and Wolf Island Class I National Wilderness Areas, respectively. UTM coordinates for this facility are Zone 17; 408.81 km E; 3354.38 km N.



2.2 STANDARD INDUSTRIAL CLASSIFICATION CODES (SIC)

Industry Group No.	49	Electric, Gas and Sanitary Services
Industry No.	4911	Electric Services

2.3 FACILITY CATEGORY

The existing facility is a power plant consisting of two combined cycle combustion turbine cogeneration systems and one simple cycle CT. Each combined cycle system consists of one combustion turbine (CT), one supplementary fired heat recovery steam generator (HRSG), and one steam turbine-generator. The facility utilizes pipeline natural gas (2.0 grains / 100scf) as its primary fuel source and low sulfur (0.05 % by weight) distillate fuel oil as a backup.

This facility is classified as a Major or Title V Source of air pollution because emissions of at least one regulated air pollutant, such as particulate matter (PM/PM₁₀), sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), or volatile organic compounds (VOC) exceeds 100 tons per year (TPY).

This facility is within an industry included in the list of the 28 Major Facility Categories per Table 62-212.400-1, F.A.C. Because emissions are greater than 100 TPY for at least one criteria pollutant, the facility is also a Major Facility with respect to Rule 62-212.400, Prevention of Significant Deterioration (PSD).

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

3. PROJECT DESCRIPTION

This project addresses each of the following emissions units:

Emissions Unit No.	Emissions unit Description
001	One nominal 170 Megawatt Gas Simple Cycle Combustion Turbine-Electrical Generator
002	One nominal 170 Megawatt Gas Combustion Turbine-Electrical Generator configured as a combined cycle unit, complete with supplementary fired HRSG
003	One nominal 170 Megawatt Gas Combustion Turbine-Electrical Generator configured as a combined cycle unit, complete with supplementary fired HRSG

JEA seeks to gain an increase in the hours of allowable operation of distillate oil combustion without increasing short or long-term emissions of SO₂. JEA proposes the combustion of 0.0065% sulfur oil in lieu of 0.05% sulfur oil as a means of accomplishing this goal. A review of the P.T.E. analysis follows.

4. PROJECT EMISSIONS

MAXIMUM POTENTIAL TO EMIT

The following table summarizes the existing potential maximum SO₂ emissions from 0.05%S oil-firing at the facility:

Unit	Max Heat Input	Authorized Daily Hours	Authorized Annual Hours	Lb SO ₂ per hour	Authorized Daily Pounds	Authorized Annual Tons
CC -1	2060	16	288	10.35	165.6	1.49
CC -2	2060	0	288	10.35	0	1.49
SC	1822	0	750	9.15	0	3.43
TOTAL				29.85	165.6	6.41

The following table summarizes the proposed potential maximum SO₂ emissions from 0.0065%S oil-firing at the facility:

Unit	Max Heat Input	Proposed Daily Hours	Proposed Annual Hours	Lb SO ₂ per hour	Proposed Daily Pounds of SO ₂	Proposed Annual Tons of SO ₂
CC -1	2060	24	1000	1.35	32.4	0.675
CC -2	2060	24	1000	1.35	32.4	0.675
SC	1822	8	750	1.19	9.52	0.446
TOTAL				3.89	74.32	1.796

Clearly, SO₂ emissions on an hourly, daily and annual basis are all less. Therefore, this project does not trigger a PSD review for SO₂. In order to be thorough, potential emissions increases of NO_x, CO and PM are reviewed as potential increases:

Unit	Gas NO _x Emission Rate lb/hr	Oil NO _x Emission Rate lb/hr	Increase in Hourly NO _x emissions lb/hr	Requested Increase in Allowable Hrs/Year Oil operation	Requested Annual NO _x Increase (Tons)	Allowable Hours Increase To Avoid PSD Review	Total Hours Approved For 0.0065%S Oil Firing
CC -1	23.6	112.4	88.8	712	31.6	451	739
CC -2	23.6	112.4	88.8	712	31.6	451	739
SC	49.67	232	182.33	0	0	0	750
TOTAL					63.2		

As can be seen from above, the authorized annual hours of operation on each CC unit must be limited to 739 in order to avoid a PSD Review.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Unit	Gas CO Emission Rate lb/hr	Oil CO Emission Rate lb/hr	Increase in Hourly CO emissions lb/hr	Requested Increase in Allowable Hrs/Year Oil operation	Annual Increase of CO (Tons)	Allowable Hours Increase To Avoid PSD Review	Total Hours Approved For 0.0065%S Oil Firing
CC -1	63	72	9	712	3.2	NA	739
CC -2	63	72	9	712	3.2	NA	739
SC	48	65	17	0	0	0	750
TOTAL					6.4		

Regarding emissions of PM, the Department has no hard data comparing 0.05% sulfur oil to 0.0065% sulfur oil. However, for the purpose of this analysis, the Department has assumed that PM emissions are roughly correlated to the sulfur content in the fuel. Based upon EIA data, typical natural gas is about 0.0005%S, compared to 0.05%S and 0.0067%S oils. Interpolating suggests that the PM emissions for 0.0067%S oil are about 13.5% of the way between natural gas and 0.05% sulfur oil.

Unit	Gas PM Emission Rate lb/hr	0.05%S Oil PM Emission Rate lb/hr	Estimated 0.0067%S Oil PM Emission Rate lb/hr	Requested Allowable Hrs/Year Oil operation	Annual Change in PM (Tons) calculated	Allowable Hours Increase To Avoid PSD Review	Total Hours Approved For 0.0065%S Oil Firing
CC -1	20.6	62.1	26.2	1000	3.2	NA	739
CC -2	20.6	62.1	26.2	1000	3.2	NA	739
SC	18	34	20.1	750	(5.2)	0	750
TOTAL					1.2		

In summary, only the emissions of NO_x would be expected to increase beyond PSD thresholds. However, by limiting the hours of operation to 739 for each of the combined cycle units, a PSD Review and related BACT Determination is avoided.

5. RULE APPLICABILITY

This facility is located in an area designated, in accordance with Rule 62-204.340, F.A.C., as attainment for all pollutants.

Rule 62-4.030, F.A.C., prohibits modification of any existing emissions unit without first receiving a permit. It further specifies that a permitted installation may only be modified in a manner that is consistent with the terms of such a permit. Rule 62-210.200, F.A.C., defines "modification" to mean generally a change that results in an increase in actual emissions of regulated air pollutants. Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C., also reiterate the requirement for construction permits. Additionally, Rule 62-210.300 requires an Air Construction permit for all new sources of air pollution unless specifically exempt. The emission unit affected by this permit shall comply with all applicable provisions of the Florida Administrative Code (including applicable portions of the Code of Federal Regulations incorporated therein).

6. DEPARTMENT DETERMINATION

The Department has determined that by limiting the number of hours by which the units are authorized to combust 0.0065% sulfur oil, all PSD emission levels remain below established thresholds eliminating the need for a PSD review.

7. SOURCE IMPACT ANALYSIS


An ambient air quality impact assessment was done in support of the original application. The modeling approach followed EPA and DEP guidelines for determining compliance with AAQS and PSD increments. An ambient air

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

quality impact assessment was also performed for this project for both the PSD Class II area in the vicinity of the facility and the PSD Class I Okefenokee National Wilderness Area, located approximately 34 kilometers northwest from the project at its closest point. Two air quality dispersion models were used to analyze air quality impacts for this project. These models were ISCST3 and CALPUFF. Five years of NWS meteorological data from Jacksonville/Waycross (1984-1988) were used for the ISCST3 Class II analysis and the portion of the Class I analysis located within 50 km of the facility. CALPUFF and three years of MM4/MM5 (1990, 1992, and 1996) mesoscale meteorological data were used for the portion of the Class I area that is located greater than 50 km from the project. The results of this modeling predict no significant contributions to any violation of an increment, standard or air quality related value.

8. CONCLUSION

Based on the foregoing technical evaluation of the application, additional information submitted by the applicant and other available information, the Department has made a preliminary determination that the proposed project as outlined will comply with all applicable state and federal air pollution regulations.

Michael P. Halpin, P.E. Review Engineer 
Department of Environmental Protection, Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
 Mr. James M. Chandler, P.E., D.F.A.
 Vice President, Operation and Maintenance
 JEA
 West Church Street
 Jacksonville, Florida 32202

2. Article Number **7000 1670 0013 3109 9564**
 (Transfer from service label)

PS Form 3811, August 2001 Domestic Return Receipt

COMPLETE THIS SECTION ON DELIVERY

A. Signature
J. Richardson

B. Received by (Printed Name) *J. Richardson* C. Date **APR 29**

D. Is delivery address different from item 1?
 If YES, enter delivery address below:

3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee)

7000 1670 0013 3109 9564

U.S. Postal Service
CERTIFIED MAIL RECEIPT
 (Domestic Mail Only; No Insurance Coverage Provided)

7000 1670 0013 3109 9564

Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$

Postmark
Here

Sent To *MR. James M. Chandler*
 Street, Apt. No., or P.O. Box No. *81 West Church St.*
 City, State, ZIP+4 *JACKSONVILLE, FL 32202*

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Walter P. Bussells
 Chief Executive Officer
 Jacksonville Electric Auth.
 21 West Church Street
 Jacksonville, FL 32202-3139

2. Article Number (Copy from service label)

Z 341 355 330

COMPLETE THIS SECTION ON DELIVERY

A. Received by (Please Print Clearly) B. Date of Delivery

T. HEANEY JUL 18 2000

C. Signature

X

T. Heaney

Addressee

D. Is delivery address different from item 1? Yes
 If YES, enter delivery address below: No

3. Service Type

- Certified Mail Express Mail
- Registered Return Receipt for Merchandise
- Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

PS Form 3811, July 1999

Domestic Return Receipt

102595-99-M-1789

Z 341 355 330

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to	
Mr. Walter Bussells, JEA	
Street & Number	
21 West Church St.	
Post Office, State, & ZIP Code	
Jacksonville, FL 32202-3139	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	
031-485-001-AC	
PSD-FL-267	
Mailed: 7-13-00	

PS Form 3800, April 1995

Z 341 355 329

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to	
Mr. N. Bert Gianazza, JEA	
Street & Number	
21 W. Church St.	
Post Office, State, & ZIP Code	
Jacksonville, FL 32202-3139	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	
0310485-001-AC	
PSD-FL-267	
Mailed: 7-13-00	

PS Form 3800, April 1995

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1 Article Addressed to:
Mr. N. Bert Gianazza, P.E.
Jacksonville Electric Aut.
21 W. Church St.
Jacksonville, FL 32202-3139

2 Article Number (Copy from service label)

Z 341 355 329

PS Form 3811, July 1999

COMPLETE THIS SECTION ON DELIVERY

A. Received by (Please Print Clearly) B. Date of Delivery

T. HEANEY JUL 18 2000

C. Signature
X T. Heaney

D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: No

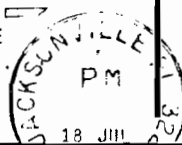
3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

Domestic Return Receipt

102595-99-M-1789

UNITED STATES POSTAL SERVICE



First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

• Sender: Please print your name, address, and ZIP+4 in this box •

RECEIVED

JUL 20 2000

BUREAU OF AIR REGULATION

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation, NSRS
2600 Blair Stone Road, MS 5505
Tallahassee, Florida 32399-2400



21 West Church Street
Jacksonville, Florida 32202-3139

RECEIVED

JUN 21 2000

BUREAU OF AIR REGULATION



June 13, 2000

Mr. Al Linero, P.E.
Administrator
New Source Review Section
Bureau of Air Quality
Department of Environmental Protection
111 South Magnolia Dr, Suite 4
Tallahassee, FL 32301

RE: Brandy Branch Facility (DEP File No. 031485-001-AC, PSD-FL-267)
Request for permit revision

Dear Mr. Linero:

Currently, in the above referenced permit, the shutdown date of the Southside Generating Station is linked to submittal of the Title V operating permit application for the Brandy Branch facility (see Administrative Requirement 14 on page 5 of 14 of the attached permit).

The original intent of this condition was to allow operation of the Southside Generating Station (SGS) until its scheduled decommissioning date of October 31, 2001, with the option of operating until as late as October 31, 2002 in the event of problems with the Brandy Branch facility construction. Unfortunately, the wording in the permit does not accomplish this goal. We only recently realized this, and are now seeking to correct this situation. Apparently, a misunderstanding with regard to the definitions of "commencement of operation" and "commercial operation" in the Title V rules allowed this situation to go unnoticed during the permit writing process.

JEA voluntarily added the condition to shut down SGS to the Brandy Branch permit because haze modeling at the screening level using CALPUFF Lite showed a greater than 5% impact on haze in the Class I areas, and our schedule would not allow us to wait for the results of the refined regional haze analysis. (Please see

June 13, 2000
Mr. Linero, P.E.
Page Two

the attached letter from the Fish and Wildlife Service). The regional haze analysis was later completed using CALPUFF. The results appear in the attached report from Golder Associates showing a predicted maximum impact on the visibility in the Class I areas of 2.6% with all three of the new Brandy Branch units operating at their maximum permitted emission rates on #2 diesel oil backup fuel. This is considerably below the significance threshold of 5%.

Our current schedule for the construction of Brandy Branch Unit 1 would require us to wait until the very end of the regulatory deadline to submit our Title V operating permit application in order to prevent premature shutdown of SGS Units 4 and 5. Even with a last minute submittal, we would still be required to shut down SGS one to two months prior to its scheduled decommissioning date of October 31, 2001. This could result in a capacity shortage in the September/October, 2001 timeframe and a possible hardship for JEA and its customers.

To correct this situation, and in light of the above information showing an insignificant impact on the Class I areas from this project, it is requested that a permit revision to Administrative Requirement 14 be issued. The following suggested language change is provided for your consideration:

From:

“14. Retirement of existing facility: In accordance with JEA’s analyses of regional haze in the nearby Class I areas, the Brandy Branch facility may cause or contribute to haze values greater than 5%. In order to mitigate this possibility, JEA will limit the operation of the combustion turbines permitted herein to a maximum of 16 hours per day of oil operation. Additionally, so as to cause a net benefit to the nearby Class I areas, JEA shall retire the existing Southside Facility (AIRS ID 0310046) located at 801 Colorado Avenue, Jacksonville, Florida upon JEA’s application for a Title V permit for the Brandy Branch facility (including certification that the facility is in compliance with applicable requirements and permit conditions). JEA shall concurrently submit a letter from the designated representative of the Southside facility certifying that the facility has been shutdown and that related permits are being surrendered. This shall occur on or before October 31, 2002.”

June 13, 2000
Mr. Linero, P.E.
Page Three

To:

"14. Retirement of existing facility: JEA will limit the operation of the combustion turbines permitted herein to a maximum of 16 hours per day of oil operation. Additionally, so as to cause a net benefit to the nearby Class I areas, JEA shall retire the existing Southside Facility (AIRS ID 0310046) located at 801 Broadcast Place, Jacksonville, Florida on or before October 31, 2001. JEA shall concurrently submit a letter from the designated representative of the Southside facility certifying that the facility has been shutdown and that related permits are being surrendered."

JEA previously provided the Department with the results of our ambient modeling analysis showing that no ambient standards or increments will be violated by this project. That analysis did not use the shutdown of SGS to offset modeled impacts.

Finally, while we are prepared to surrender the permits for our main generating units at SGS (Units 4 and 5), certain activities and unregulated/insignificant unit operations will continue during the decommissioning process (such as the gas fired auxiliary boiler, emergency generator, fuel storage tanks, welding, etc.). Please advise if we need to take any additional action to continue these activities which already appear in our Title V permit.

If you have any questions with regard to this matter, please contact me at (904) 665-6247.

Sincerely,



N. Bert Gianazza, P.E.
Environmental Permitting
& Compliance

Attachments: As Noted.

cc: C. Fancy, P.E., FDEP
S. Pace, P.E., RESD

Best Available Copy

bc: J. Connolly
C. Bond
G. Quick
E. Mims
A. Mann
B. Gianazza
T. Hillman (w/ photo)
File (w/ photo)
4, 13

BBREV



June 13, 2000

Mr. Al Linero, P.E.
Administrator
New Source Review Section
Bureau of Air Quality
Department of Environmental Protection
111 South Magnolia Dr, Suite 4
Tallahassee, FL 32301

RE: Brandy Branch Facility (DEP File No. 031485-001-AC, PSD-FL-267)
Request for permit revision

Dear Mr. Linero:

Currently, in the above referenced permit, the shutdown date of the Southside Generating Station is linked to submittal of the Title V operating permit application for the Brandy Branch facility (see Administrative Requirement 14 on page 5 of 14 of the attached permit).

The original intent of this condition was to allow operation of the Southside Generating Station (SGS) until its scheduled decommissioning date of October 31, 2001, with the option of operating until as late as October 31, 2002 in the event of problems with the Brandy Branch facility construction. Unfortunately, the wording in the permit does not accomplish this goal. We only recently realized this, and are now seeking to correct this situation. Apparently, a misunderstanding with regard to the definitions of "commencement of operation" and "commercial operation" in the Title V rules allowed this situation to go unnoticed during the permit writing process.

JEA voluntarily added the condition to shut down SGS to the Brandy Branch permit because haze modeling at the screening level using CALPUFF Lite showed a greater than 5% impact on haze in the Class I areas, and our schedule would not allow us to wait for the results of the refined regional haze analysis. (Please see

June 13, 2000
Mr. Linero, P.E.
Page Two

the attached letter from the Fish and Wildlife Service). The regional haze analysis was later completed using CALPUFF. The results appear in the attached report from Golder Associates showing a predicted maximum impact on the visibility in the Class I areas of 2.6% with all three of the new Brandy Branch units operating at their maximum permitted emission rates on #2 diesel oil backup fuel. This is considerably below the significance threshold of 5%.

Our current schedule for the construction of Brandy Branch Unit 1 would require us to wait until the very end of the regulatory deadline to submit our Title V operating permit application in order to prevent premature shutdown of SGS Units 4 and 5. Even with a last minute submittal, we would still be required to shut down SGS one to two months prior to its scheduled decommissioning date of October 31, 2001. This could result in a capacity shortage in the September/October, 2001 timeframe and a possible hardship for JEA and its customers.

To correct this situation, and in light of the above information showing an insignificant impact on the Class I areas from this project, it is requested that a permit revision to Administrative Requirement 14 be issued. The following suggested language change is provided for your consideration:

From:

“14. Retirement of existing facility: In accordance with JEA’s analyses of regional haze in the nearby Class I areas, the Brandy Branch facility may cause or contribute to haze values greater than 5%. In order to mitigate this possibility, JEA will limit the operation of the combustion turbines permitted herein to a maximum of 16 hours per day of oil operation. Additionally, so as to cause a net benefit to the nearby Class I areas, JEA shall retire the existing Southside Facility (AIRS ID 0310046) located at 801 Colorado Avenue, Jacksonville, Florida upon JEA’s application for a Title V permit for the Brandy Branch facility (including certification that the facility is in compliance with applicable requirements and permit conditions). JEA shall concurrently submit a letter from the designated representative of the Southside facility certifying that the facility has been shutdown and that related permits are being surrendered. This shall occur on or before October 31, 2002.”

June 13, 2000
Mr. Linero, P.E.
Page Three

To:

“14. Retirement of existing facility: JEA will limit the operation of the combustion turbines permitted herein to a maximum of 16 hours per day of oil operation. Additionally, so as to cause a net benefit to the nearby Class I areas, JEA shall retire the existing Southside Facility (AIRS ID 0310046) located at 801 Broadcast Place, Jacksonville, Florida on or before October 31, 2001. JEA shall concurrently submit a letter from the designated representative of the Southside facility certifying that the facility has been shutdown and that related permits are being surrendered.”

JEA previously provided the Department with the results of our ambient modeling analysis showing that no ambient standards or increments will be violated by this project. That analysis did not use the shutdown of SGS to offset modeled impacts.

Finally, while we are prepared to surrender the permits for our main generating units at SGS (Units 4 and 5), certain activities and unregulated/insignificant unit operations will continue during the decommissioning process (such as the gas fired auxiliary boiler, emergency generator, fuel storage tanks, welding, etc.). Please advise if we need to take any additional action to continue these activities which already appear in our Title V permit.

If you have any questions with regard to this matter, please contact me at (904) 665-6247.

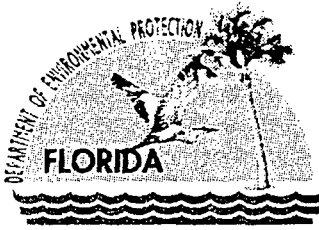
Sincerely,



N. Bert Gianazza, P.E.
Environmental Permitting
& Compliance

Attachments: As Noted.

cc: C. Fancy, P.E., FDEP
S. Pace, P.E., RESD



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
July 12, 2000

David B. Struhs
Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Walter P. Bussells
Chief Executive Officer
Jacksonville Electric Authority (JEA)
21 West Church Street
Jacksonville, Florida 32202-3139

Re: Retirement of Southside Generating Station required within Permit No. 0310485-001-AC, PSD-FL-267
Brandy Branch Facility

The applicant, JEA, applied on June 21, 2000, to the Department for a revision to the retirement date of the Southside Generating Station. This requirement is specified within air construction permit number 0310485-001-AC, which allows for construction of the Brandy Branch Facility located at Baldwin City, Duval County. The Department has reviewed the request. The retirement date specified in Condition 14 of **Section II. Administrative Requirements** is hereby revised as follows:

Retirement of existing facility: ~~In accordance with JEA's analyses of regional haze in the nearby Class I areas, the Brandy Branch facility may cause or contribute to haze values greater than 5%. In order to mitigate this possibility, JEA will limit the operation of the combustion turbines permitted herein to a maximum of 16 hours per day of oil operation. Additionally, so as to cause a net benefit to the nearby Class I areas, JEA shall retire the existing Southside Facility (AIRS ID 0310046) located at 801 Colorado Avenue, Jacksonville, Florida upon JEA's application for a Title V permit for the Brandy Branch facility (including certification that the facility is in compliance with applicable requirements and permit conditions), on or before October 31, 2001. JEA shall concurrently submit a letter from the designated representative of the Southside facility certifying that the facility has been shutdown and that related permits are being surrendered. This shall occur on or before October 31, 2002.~~

A copy of this letter shall be filed with the referenced permit and shall become part of the permit. This permitting decision is issued pursuant to Chapter 403, Florida Statutes.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

"More Protection, Less Process"

Printed on recycled paper.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation is not available in this proceeding.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

This permitting decision is final and effective on the date filed with the clerk of the Department unless a petition is filed in accordance with the above paragraphs or unless a request for extension of time in which to file a petition is filed within the time specified for filing a petition pursuant to Rule 62-110.106, F.A.C., and the petition

conforms to the content requirements of Rules 28-106.201 and 28-106.301, F.A.C. Upon timely filing of a petition or a request for extension of time, this order will not be effective until further order of the Department.

Any party to this permitting decision (order) has the right to seek judicial review of it under section 120.68 of the Florida Statutes, by filing a notice of appeal under 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 must be filed within thirty days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.



Howard L. Rhodes, Director
Division of Air Resources
Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this order was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 7/13/00 to the person(s) listed:

Walter P. Bussells, JEA *
N. Bert Gianazza, P.E., JEA *
Chris Kirts, NED
James L. Manning, P.E. RESD
Gregg Worley, EPA
John Bunyak, NPS

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

 7/13/00
(Clerk) (Date)

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
 Walter P. Bussells
 Chief Executive Officer
 Jacksonville Electric Auth.
 21 West Church Street
 Jacksonville, FL 32202-3139

2. Article Number (Copy from service label)
 Z 341 355 330

COMPLETE THIS SECTION ON DELIVERY

A. Received by (Please Print Clearly) **T. HEANEY** B. Date of Delivery **JUL 18 2000**

C. Signature **X** *T. Heaney* Agent Addressee

D. Is delivery address different from item 1? Yes No
 If YES, enter delivery address below: No

3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

Z 341 355 330

US Postal Service
Receipt for Certified Mail

No Insurance Coverage Provided.
 Do not use for International Mail (See reverse)

Sent to	
Mr. Walter Bussells, JEA	
Street & Number	
21 West Church St.	
Post Office, State, & ZIP Code	
Jacksonville, FL 32202-3139	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	
031-485-001-AC	
PSD-FL-267	
Mailed: 7-13-00	

PS Form 3800, April 1995

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	<p>A. Received by (Please Print Clearly) T. HEARNEY B. Date of Delivery JUL 18 2000</p> <p>C. Signature X T. Heaney <input type="checkbox"/> Sent, <input type="checkbox"/> Addressee</p>
<p>1. Article Addressed to: Mr. N. Bert Gianazza, P.E. Jacksonville Electric Aut. 21 W. Church St. Jacksonville, FL 32202-3139</p>	<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p> <p>3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>
<p>2. Article Number (Copy from service label) Z 341 355 329</p>	
<p>PS Form 3811, July 1999</p>	<p>Domestic Return Receipt 102595-99-M-1789</p>

Z 341 355 329

US Postal Service
Receipt for Certified Mail

No Insurance Coverage Provided.
 Do not use for International Mail (See reverse)

Sent to	
Mr. N. Bert Gianazza, JEA	
Street & Number	
21 W. Church St.	
Post Office, State, & ZIP Code	
Jacksonville, FL 32202-3139	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	
0310485-001-AC PSD-FL-267 Mailed: 7-13-00	

PS Form 3800, April 1995

Florida Department of
Environmental Protection

Memorandum

TO: Howard L. Rhodes
THRU: Clair Fancy *CAF*
Al Linero *aal 7/7*
FROM: Mike Halpin *MH*
DATE: July 7, 2000
SUBJECT: JEA Brandy Branch PSD Permit revision

BAR
RECEIVED
JUL 13 2000
BUREAU OF AIR REGULATION

Attached for approval and signature is a minor air construction permit revision for the subject (new) facility.

The original Brandy Branch PSD permit mandated that an existing JEA facility (Southside) was to be shut down as the result of preliminary Cal-puff modeling which indicated that without such a shutdown, regional haze in nearby Class I areas may be adversely affected. Although the applicant subsequently completed the modeling and indicated to FDEP that regional haze is not adversely affected, JEA remains committed to the shutdown, requesting a "date certain" rather than a floating date. Since the requested "date certain" is 12 months prior to the allowable date specified in the original permit, I do not recommend that the applicant should be required to publish a notice.

I recommend your approval and signature.

Attachments

/mph



BLACK & VEATCH

8400 Ward Parkway
P.O. Box 8405
Kansas City, Missouri 64114

Black & Veatch Corporation

Tel: (913) 458-2000

RECEIVED

MAR 11 2004

JEA Brandy Branch
Fuel Flexibility

B&V Project 133972
B&V File 32.0000
March 10, 2004

BUREAU OF AIR REGULATION

James K. Pennington
Florida Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Mail Stop #5505
Tallahassee, Florida 32399-2400

Project No. : 0310485-007-AC
0310485-008-AV

Subject: Lower Sulfur Fuel Oil Operation

On behalf of JEA, Black & Veatch is submitting this letter report summarizing JEA's proposed use of lower sulfur fuel oil and an associated increase in oil firing hours for the simple cycle combustion turbine (SCCT) and the two combined cycle combustion turbines (CCCT) at the Brandy Branch facility. This letter report is a technical support document for the Prevention of Significant Deterioration (PSD) Air Permit addendum and Title V revision application. The following sections of this letter contain the project history, project description, and attachments containing an air quality impact analysis (AQIA) and additional impact analyses designed to provide a basis for the Florida Department of Environmental Protection's (FDEP) preparation of a revised air construction permit and a revised Title V air operating permit for the Brandy Branch Generating Station. Required FDEP application forms are also included as an attachment to this letter. This submittal serves as an addendum to the original PSD permit application and is not considered a modification of an existing major source.

Project History

The JEA Brandy Branch Generating Station (hereinafter referred to as the "Generating Station") near Baldwin City, Duval County, Florida was originally permitted to construct three SCCT units (Permit No. PSD-FL-267). Two fuel oil storage tanks and related support facilities were included as part of the original permit and have already been

JEA Brandy Branch
Fuel Flexibility

B&V Project 133972
March 10, 2004

installed. The three SCCTs permitted were limited to a total of 4,750 hr/yr operation on pipeline natural gas (2.0 grains sulfur / 100 scf) (hereinafter, referred to as 2.0 natural gas) but air dispersion modeling was performed using natural gas (0.2 grains sulfur / 100 scf) (hereinafter, referred to as 0.2 natural gas). Additionally, each SCCT was permitted with 750 hr/yr of No. 2 distillate fuel oil (0.05 % sulfur) (hereinafter, referred to as No. 2 fuel oil) firing. Based on the AQIA, each SCCT was limited to no more than 16 hr/day of No. 2 fuel oil firing with the remainder on 0.2 natural gas.

It should be noted that a screening level regional haze analysis was conducted for Okefenokee Class I area using the ISC air dispersion model. The initial screening results indicated that the Brandy Branch facility may cause or contribute to haze values greater than 5%. Thus, JEA limited daily No. 2 fuel oil firing to 16 hr/day per SCCT. Additionally, as indicated in Condition #14 of Permit No. PSD-FL-267, so as to cause a net benefit to the nearby Class I areas, JEA retired the Southside Facility and surrendered related permits (AIRS ID 0310046).

A subsequent construction permit (Permit No. PSD-FL-310) allowed for conversion of two of the three SCCT units to CCCT units. The conversion of the two SCCT units to CCCT units with supplemental firing in the heat recovery steam generator (HRSG) is currently in the construction phase. Related support facilities were permitted along with the CCCT units which will be operated in a 2x1 configuration. No additional No. 2 fuel oil storage was permitted with the conversion to the CCCT units and no additional No. 2 fuel oil storage capacity was requested.

The submitted PSD permit revision for the CCCTs reflected, based on a new AQIA, 8,760 hr/yr of firing 0.2 natural gas each and 576 hr/yr total of No. 2 fuel oil and no more than 16 hr/day firing No. 2 fuel oil with the remaining 8 hr/day firing 0.2 natural gas. During the review, EPA determined that the application was not a modification of an existing major source, but an addenda to the original PSD application. Therefore, the applicable PSD pollutants and air quality impact assessments should include the emissions associated with the operation of the two converted CCCT's and the previously permitted SCCT. Three separate air dispersion modeling analyses were submitted to FDEP and EPA in support of agency review for this revision (i.e., September 21, October 31, and November 7, 2001). The final AQIA reflected 8,760 hr/yr firing 0.2 natural gas each and two additional No. 2 fuel oil scenarios:

JEA Brandy Branch
Fuel Flexibility

B&V Project 133972
March 10, 2004

- The SCCT operating 16 hr/day on No. 2 fuel oil and the remainder of the day (8 hr) on 0.2 natural gas and simultaneously the two CCCTs operating 24 hr/day on 0.2 natural gas.
- One CCCT operating 16 hr/day on No. 2 fuel oil and the remainder of the day (8 hr) on 0.2 natural gas and simultaneously the SCCT and other CCCT operating 24 hr/day on 0.2 natural gas.

Both EPA and FDEP approved this final modeling analysis. During discussions with these agencies in regard to obtaining operational flexibility in the draft permit, JEA was notified that the original permit contained a BACT natural gas usage limit of 2.0 natural gas while the air dispersion modeling was performed using the 0.2 natural gas. In keeping with the schedule for issuance of the Conditions of Certification, JEA agreed to restrictive permit conditions with the option of investigating additional operating scenarios after permit issuance. The resulting final fuel firing operational limitations contained in the PSD Permit is for one combustion turbine (either one of the combined cycle turbines or the simple cycle turbine) operating on No. 2 fuel oil for 16 hr/day, with no additional hours of operation on 2.0 natural gas in any of the turbines (refer to PSD Permit No. PSD-FL-310, Condition #14).

On March 13, 2003 JEA submitted an application to revise their PSD Air Construction Permit for the Generating Station's two CCCT by increasing the duct burner size in each HRSG. Originally, the CCCT Units 2 and 3 were each permitted with a 2.0 natural gas fired duct burner, again while the air dispersion modeling was performed using the 0.2 natural gas. The permitted maximum heat input of each duct burner was 85 MMBtu/hr (HHV) and had a regulatory classification under 40 CFR Part 60 as a Dc unit. JEA submitted a request to increase each duct burner's maximum heat input from 85 MMBtu/hr to 170 MMBtu/hr (HHV). The change in duct burner size classified each burner as a Db unit. In support of this revision, an AQIA was submitted which demonstrated compliance with applicable PSD modeling thresholds. A permit revision was granted in the summer of 2003 incorporating the aforementioned duct burner changes.

The facility holds a Title V operating permit (Permit No. 0310485-005-AV) issued March 19, 2003. The CCCT units have not yet been incorporated into the Title V permit.

Project Description

As previously discussed, the Generating Station is currently permitted to construct and operate one SCCT (Unit 1) and two CCCTs (Units 2 and 3). Unit 1 is operational while Units 2 and 3 are currently operating as SCCT's while under construction for conversion to combined cycle units. Due to SO₂ ambient air quality impact concerns when firing 0.2 natural gas and No. 2 fuel oil, the existing permit includes restrictive short-term operating limits. JEA proposes to permit an alternate operating scenario allowing for use of 2.0 natural gas and a cleaner, lower sulfur fuel oil (0.0065% sulfur) (hereinafter, referred to as LSFO) for greater operational flexibility at the Generating Station while meeting compliance requirements.

Natural Gas

Condition #23 of PSD Permit No. PSD-FL-310 establishes that SO₂ emissions shall be limited by firing pipeline natural gas (sulfur content not greater than 2 grains / 100 scf). The discontinuity in sulfur content which was used in the air dispersion modeling performed for the combined cycle conversion (0.2 natural gas) and that which was assessed as BACT by FDEP (2.0 natural gas) was one of the factors which led to the restrictive operating limits in the current permit.

Additionally, the definition of pipeline natural gas and natural gas were revised on June 12, 2002 (Ref: 40411 FR Vol. 67 No. 113). The EPA has removed all references to hydrogen sulfide content in the new definition and has instead defined pipeline natural gas based on total sulfur. The definition of pipeline natural gas and natural gas as listed in the federal register and incorporated into the CFR Part 72.2, is provided below:

Pipeline natural gas: a naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions and which is provided by a supplier through a pipeline. Pipeline natural gas contains 0.5 grains or less of total sulfur per 100 standard cubic feet. Additionally, pipeline natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1100 Btu per standard cubic foot.

Natural gas: *a naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions. Natural gas contains 20.0 grains or less of total sulfur per 100 standard cubic feet. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1100 Btu per standard cubic foot. Natural gas does not include the following gaseous fuels: landfill gas, digester gas, refinery gas, sour gas, blast furnace gas, coal-derived gas, producer gas, coke oven gas, or any gaseous fuel produced in a process which might result in highly variable sulfur content or heating value.*

It is suggested that consistent language be used in referencing the sulfur content of pipeline quality natural gas and natural gas such that there is not a misinterpretation in the permit. To further clarify the permit and increase operational flexibility at the Generating Station, it is requested that language be included in the permit such that pipeline quality natural gas and/or natural gas are defined as containing 2 grains sulfur / 100 scf (2.0 natural gas). Thus, all references to this gaseous fuel throughout the permit can be consistently identified as either pipeline quality natural gas or natural gas. In order to revise the permit language to a more consistent basis, it has been assumed that a demonstration of compliance through air dispersion modeling would be required for the combustion turbines firing 2.0 natural gas. This issue has been addressed in the air dispersion modeling contained in Attachment 1 & 2 and is further described below as it relates to operation on LSFO.

Fuel Oil

Currently, all three units are permitted to fire 2.0 natural gas (although previously mentioned, air dispersion modeling was performed at 0.2 natural gas) and No. 2 fuel oil. Under the proposed additional operating scenario, JEA is requesting that the firing of a LSFO be permitted for use in all three combustion turbines in lieu of No. 2 fuel oil when it becomes commercially available for use in Florida. The use of 2.0 natural gas will still remain the primary fuel for the combustion turbines. In conjunction with permitting the use of LSFO, this application seeks to permit additional allowable hours of annual LSFO fuel oil firing and less restrictive daily operating limits as compared to the existing

JEA Brandy Branch
Fuel Flexibility

B&V Project 133972
March 10, 2004

stringent short-term permit limits as described in permit conditions for fuel oil firing scenarios as outlined in the FDEP PSD Air Construction Permit (PSD-FL-310), Condition #14 (page 7 of 14):

Maximum allowable hours of operation for the 540 MW Combined Cycle Plant are 8760 hours per year while firing natural gas. The combined hours of fuel oil firing for the two combined cycle combustion turbines is limited to 576 hours per consecutive 12-month period and fuel oil firing for the simple cycle unit is limited to 750 hours per consecutive 12-month period. In the event that any of the 3 emission units (simple or combined cycle) fires fuel oil during a calendar day, that unit shall be limited to 16 hours of daily operation on any fuel. Additionally, the other 2 units shall not be fired on any fuel for the calendar day.

No revisions to the operating restrictions or fuels are proposed for this existing condition as it pertains to operation with the 0.05% sulfur fuel oil. Until such time that LSFO is commercially available, JEA will comply with Condition #14, but requests revisions to the Condition to clarify the use of No. 2 fuel oil and 2.0 natural gas. In general, the suggested revisions to Condition #14 include the following for illustration purposes.

Maximum allowable hours of operation for the 540 MW Combined Cycle Plant are 8760 hours per year while firing natural gas (2.0 grains sulfur / 100scf). The combined hours of No. 2 distillate fuel oil (0.05% sulfur) firing for the two combined cycle combustion turbines is limited to 576 hours per consecutive 12-month period and No. 2 distillate fuel oil (0.05% sulfur) firing for the simple cycle unit is limited to 750 hours per consecutive 12-month period. In the event that any of the 3 emission units (simple or combined cycle) fires No. 2 distillate fuel oil (0.05% sulfur) during a calendar day, that unit shall be limited to 16 hours of daily operation on any fuel. Additionally, the other 2 units shall not be fired on any fuel for the calendar day.

As LSFO becomes commercially available, and upon written notification by JEA, the following new condition is proposed to govern operation of the three combustion turbines. Again, for illustration purposes a general condition has been included.

JEA Brandy Branch
Fuel Flexibility

B&V Project 133972
March 10, 2004

Maximum allowable hours of operation for the 540 MW Combined Cycle Plant are 8,760 hours per year while firing natural gas (2.0 grains sulfur / 100 scf). The combined hours of lower sulfur fuel oil (0.0065% sulfur) firing for the two combined cycle combustion turbines is limited to 2,000 hours per consecutive 12-month period and lower sulfur fuel oil (0.0065% sulfur) firing for the simple cycle unit is limited to 1,000 hours per consecutive 12-month period. In the event that all 3 emission units (simple and combined cycle) fires lower sulfur fuel oil (0.0065% sulfur) during a calendar day, each combined cycle unit shall be allowed 24 hours of daily operation while the simple cycle unit shall be limited to 8 hours of daily operation. In the event that the simple cycle unit fires lower sulfur fuel oil (0.0065% sulfur) for more than 8 hours during a calendar day, it shall be allowed 24 hours of daily operation while the combined cycle units shall not be fired on any fuel for the calendar day.

However, it should be noted that JEA requests, upon written notification to FDEP, the ability to switch between No. 2 fuel oil or LSFO depending upon fuel availability. It is understood that other conditions and descriptions in the PSD permit (Permit No. PSD-FL-310) and the Generating Station Title V permit will require similar updates.

As previously discussed, air dispersion modeling has been performed to address the proposed alternate operating scenario based on the fuel sulfur contents reflecting LSFO containing 0.0065% sulfur and natural gas containing 2 grains sulfur/100 scf.

Air Dispersion Modeling

Included with this submittal are the results of air dispersion modeling demonstrating that relaxing the short term operational limits and allowing for increased annual hours of fuel oil firing when using the LSFO and 2.0 natural gas will not result in adverse ambient air impacts.

The modeling analyses followed the approved approach used in the previous modeling submittals for this permit (i.e., SCCT, CCCT, and Duct Burner Increase) and the air dispersion modeling protocol document submitted to FDEP on January 9, 2004. The modeling performed for the Class II demonstration was limited to using the EPA ISCST3

JEA Brandy Branch
Fuel Flexibility

B&V Project 133972
March 10, 2004

air dispersion model to predict pollutant concentrations for areas less than 50 km from the project. Specifically, the Class II area surrounding the project and Okefenokee National Wildlife Refuge (ONWR) Class I area were analyzed. Modeling performed for the Class I demonstration for predicted impacts for regional haze and deposition for Class I areas at distances greater than 50 km from the project was performed using the approved long-range transport model CALPUFF. A comparison of the Class II and Class I modeled impacts to the applicable Prevention of Significant Deterioration (PSD) Significant Impact Levels (SILs) for all pollutants for the proposed fuel changes were made. As each analysis indicates, the project's maximum predicted concentrations are less than the applicable PSD SILs. Therefore, under the PSD program, no further air quality impact analyses are required for the proposed alternate operating scenario firing the LSFO and 2.0 natural gas.

The air dispersion modeling technical support document and a CD-ROM containing the electronic air dispersion modeling files which demonstrate compliance with the PSD SILs has been enclosed with this document.

Basis of information

The information for the aforementioned permit addenda is based on the following:

- May 1999 SCCT application document and subsequent permit (Permit No. PSD-FL-267).
- December 2000 CCCT application document and subsequent permit (Permit No. PSD-FL-310).
- March 2003 Duct Burner administrative change submittal and subsequent amended permit summer 2003.
- Conversations with the fuel vendor and GE turbine manufacturer indicated that the LSFO will have no change to or effect the operation of the turbine or electrical generation, stack parameters (flows and temperatures), or pollutant emissions except for an SO₂ reduction.

Requested Actions

The purpose of this submittal is not only to obtain a construction permit revision allowing for the firing of LSFO, but it is also to incorporate this alternate operating scenario and the CCCT conversions into the Title V permit. Because the CCCT units have not yet begun operation, per §62-213.420(1)(a).4., F.A.C., this submittal includes a compliance

JEA Brandy Branch
Fuel Flexibility

B&V Project 133972
March 10, 2004

schedule and methodology for the CCCT units. Attachment 3 contains the FDEP application forms.

Based on the information submitted and the results of the ambient air quality analyses, it is requested that FDEP grant this revision to the Brandy Branch PSD Air Construction Permit (PSD-FL-310) and incorporate the aforementioned changes into the revised Generating Station Title V permit.

If you have any questions or comments, please feel free to contact either myself at 913-458-9062 or Bob Holmes at 913-458-2126.

Very truly yours,

BLACK & VEATCH

Kyle Lucas
Air Quality Specialist

Enclosure

cc: B. Gianazza – JEA
B. Holmes – B&V
File

Attachment 1

**ISC Class II and Class I
Air Dispersion Modeling Report**

**INDUSTRIAL SOURCE COMPLEX
CLASS II AND CLASS I
AIR DISPERSION MODELING REPORT
FOR THE
GENERATING STATION**

**PREPARED BY
BLACK & VEATCH**

MARCH 2004

Table of Contents

1.0 Air Quality Impact Analysis	1-1
1.1 Model Selection	1-1
1.2 Model Input and Options	1-1
1.2.1 Model Input Source Parameters	1-1
1.2.2 Land Use Dispersion Coefficient Determination	1-3
1.2.3 GEP Stack Height Determination	1-3
1.2.4 Model Defaults	1-3
1.2.5 Receptor Grid and Terrain Considerations	1-3
1.2.6 Meteorological Data	1-7
1.3 Model Results	1-7
2.0 Class I Area Impact Analyses	2-1
2.1 Ground-Level Impact Analysis	2-1
2.2 Visibility Analysis	2-10
2.2.1 Visual Quality of the Area	2-10
2.2.2 Visual Impairment Screening Assessment	2-10
2.2.3 VISCREEN Results	2-12

List of Tables

Table 1-1 Representative (<i>Enveloped</i>) Stack Parameters and Pollutant Emissions Used in ISCST3 Modeling Analysis For Pollutants with Averaging Periods Less Than 24 Hours	1-4
Table 1-2 Representative (Enveloped) Stack Parameters and Pollutant Emissions Used in ISCST3 Modeling Analysis For Pollutants with Averaging Periods of 24 Hours	1-5
Table 1-3 Representative (Enveloped) Stack Parameters and Pollutant Emissions Used in ISCST3 Modeling Analysis For Pollutants with Annual Averaging Periods	1-6
Table 1-4 ISCST3 Model Predicted Maximum 1-hour Concentrations of CO	1-9
Table 1-5 ISCST3 Model Predicted Maximum 8-hour Concentrations of CO	1-10
Table 1-6 ISCST3 Model Predicted Maximum 3-hour Concentrations of SO ₂	1-11
Table 1-7 ISCST3 Model Predicted Maximum 24-hour Concentrations of SO ₂	1-12
Table 1-8 ISCST3 Model Predicted Maximum 24-hour Concentrations of PM ₁₀	1-13
Table 1-9 ISCST3 Model Predicted Maximum Annual Concentrations of NO _x	1-14
Table 1-10 ISCST3 Model Predicted Maximum Annual Concentrations of SO ₂	1-15
Table 1-11 ISCST3 Model Predicted Maximum Annual Concentrations of PM ₁₀	1-16
Table 2-1 ISCST3 Model Predicted Maximum Annual Concentrations of NO _x	2-4
Table 2-2 ISCST3 Model Predicted Maximum Annual Concentrations of SO ₂	2-5
Table 2-3 ISCST3 Model Predicted Maximum Annual Concentrations of PM ₁₀	2-6
Table 2-4 ISCST3 Model Predicted Maximum 3-hour Concentrations of SO ₂	2-7

Table 2-5 ISCST3 Model Predicted Maximum 24-hour Concentrations of SO₂..... 2-8
 Table 2-6 ISCST3 Model Predicted Maximum 24-hour Concentrations of PM₁₀..... 2-9

List of Figures

Figure 1-1 Class II Receptor Location Plot..... 1-8
 Figure 2-1 Generating Station Location With Respect To Okefenokee..... 2-2
 Figure 2-2 Okefenokee Receptors within 50 km..... 2-3

Appendices

Appendix A Vendor Performance And Emissions Summary Sheets
 Appendix B..... VISCREEN Output

1.0 Air Quality Impact Analysis

This Air Quality Impact Analysis (AQIA) is intended to support JEA's proposed fuel oil switch and increase in oil firing hours of operation for the simple cycle combustion turbine (SCCT) and the two combined cycle combustion turbines (CCCTs) at the Brandy Branch Generating Station facility (hereinafter referred to as the Proposed Project). Specifically, JEA proposes to permit an alternate operating scenario allowing for the use of natural gas with a higher sulfur content of 2.0 grains per 100 standard cubic feet (hereinafter referred to as 2.0 natural gas) and a cleaner, lower sulfur fuel oil (0.0065% sulfur) (hereinafter referred to as LSFO). This will allow greater operational flexibility for the Generating Station while meeting compliance requirements.

The following sections discuss the air dispersion modeling performed for the Prevention of Significant Deterioration (PSD) air quality impact analysis for those pollutants, which will have a Potential to Emit (PTE) greater than the PSD significant emission rate (i.e., NO_x, SO₂, CO, and PM₁₀). The air dispersion modeling analysis was conducted in accordance with EPA's air dispersion modeling guidelines (incorporated as Appendix W of 40 CFR 51), mutually agreed upon air dispersion modeling performed in support of Brandy Branch permits PSD-FL-267 and PSD-FL-310, as well as an air dispersion modeling protocol submitted to FDEP on behalf of JEA in a memorandum from Black & Veatch dated January 12, 2004.

1.1 Model Selection

The Industrial Source Complex Short-Term (ISCST3 Version 02035) air dispersion model was used to predict maximum ground level concentrations associated with the Proposed Project emissions. The ISCST3 model is an EPA approved, steady-state, straight-line Gaussian plume model, which may be used to access pollutant concentrations from a wide variety of sources associated with an industrial source complex. In addition, ISCST3, unlike its predecessors, incorporates the COMPLEX1 dispersion algorithm for determining intermediate and complex terrain concentration impacts in accordance with EPA guidance.

1.2 Model Input and Options

This section discusses the model input parameters, source and emission parameters, and the ISCST3 model default options and input databases.

1.2.1 Model Input Source Parameters

The ISCST3 model was used to determine the maximum predicted ground-level concentration for each pollutant and applicable averaging period resulting from various operating loads, fuels (i.e., 2.0 natural gas and LSFO), and ambient temperatures. This was accomplished by representing each unit's operating load range (i.e., 50, 75, and 100 percent

loads) with a worst-case set of stack parameters and pollutant emission rates that were conservatively selected from vendor performance data to produce the worst-case plume dispersion conditions (i.e., lowest exhaust temperature and exit velocity and the highest emission rate). This process is referred to as “enveloping”.

The worst-case representative stack parameters and emission rates for each load, fuel type, and ambient temperature considered in the analysis are presented in Tables 1-1, 1-2, and 1-3. It should be noted that the information for the modeling is based on the following:

- May 1999 SCCT application document and subsequent permit (Permit No. PSD-FL-267).
- December 2000 CCCT application document and subsequent permit (Permit No. PSD-FL-310).
- March 2003 Duct Burner administrative change submittal and subsequent amended permit summer 2003.
- Conversations with the fuel vendor and GE turbine manufacturer indicated that the LSFO will have no change to or effect the operation of the turbine or electrical generation, stack parameters (flows and temperatures), or pollutant emissions except for an SO₂ reduction.

Spreadsheets used in determining the load based representative emissions and stack parameters from the aforementioned vendor performance data have been summarized and are included in Appendix A. In general, given the new fuel sulfur values discussed above, the proposed operating scenarios, and thus the modeling scenarios represented in this report, are as follows:

- All three combustion turbines can be operated on 2.0 natural gas as dictated by their current permits' operating conditions which allow the simple cycle combustion turbine to operate 4,750 hours per year and the combined cycle units to operate 8,760 hours per year each while firing natural gas.
- The simple cycle combustion turbine can be operated up to 8 hours per day while the combined cycle units can be operated up to 24 hours/day while firing the LSFO on a short-term basis. On a long-term basis, the units can be operated on the LSFO as dictated by the proposed permits' operating conditions which allow the simple cycle combustion turbine to operate 1,000 hours per year and the combined cycle units to operate 1,000 hours per year each while firing natural gas with the remained of the year on 2.0 natural gas.
- The simple cycle combustion turbine can be operated up to 24 hours/day while firing the LSFO the combined cycle units shall not be fired on any fuel for the same 24 hours.

1.2.2 Land Use Dispersion Coefficient Determination

The EPA's land use method was used to determine whether rural or urban dispersion coefficients should be used in the ISCST3 air dispersion model. In this procedure, land circumscribed within a 3 km radius of the site was classified as rural or urban using the Auer land use classification method. Based on a visual inspection of the USGS 7.5 minute topographic map of the Generating Station's location, it was concluded that over 50 percent of the area surrounding the Generating Station is classified as rural. Accordingly, the rural dispersion modeling option was used in the ISCST3 air dispersion modeling.

1.2.3 GEP Stack Height Determination

The Generating Station's buildings and structures were analyzed to determine their potential to influence the dispersion of stack emissions. EPA's Guideline for Determination of Good Engineering Practice Stack Height guidance document was followed in this evaluation. Structure dimensions and relative locations were entered into EPA's Building Profile Input Program (BPIP) to produce an ISCST3 input file with the proper Huber-Snyder or Schulman-Scire direction specific building downwash parameters.

1.2.4 Model Defaults

The following standard USEPA default regulatory modeling options were initialized in the ISCST3 air dispersion modeling:

- Final plume rise.
- Stack-tip downwash.
- Buoyancy induced dispersion.
- Default vertical wind profile exponents and vertical potential temperature gradient values.
- Calm processing option.
- Flat terrain option.

1.2.5 Receptor Grid and Terrain Considerations

The air dispersion modeling receptor locations were established at appropriate distances to ensure sufficient density and aerial extent to adequately characterize the pattern of pollutant impacts in the area. Specifically, a nested rectangular grid network that extends 10 km from the center of the Generating Station was used. The rectangular grid network consists of 100 m spacing from the fence line out to 1 km, 250 m spacing from 1 to 2.5 km, 500 m spacing from 2.5 to 5 km, and then 1,000 m spacing from 5 to 10 km. Receptor spacing of 100 m intervals

Table 1-1
 Representative (*Enveloped*) Stack Parameters and Pollutant Emissions ^a Used in ISCST3 Modeling Analysis
 For Pollutants with Averaging Periods Less Than 24 Hours

Operating Scenario/Fuel	ISCST3 Source ID	Load	Stack Height (m)	Stack Diameter (m)	Exit Velocity (m/s)	Exit Temp (K)	Pollutant Emission Rate (g/s)				
							NO _x	SO ₂ ^d	CO ^e	PM ₁₀	
2.0 natural gas ^b	Simple Cycle	100	27.43	5.49	45.04	855.93	N/A	1.44	6.55	N/A	
	Combined Cycle 1	100	57.91	5.49	18.71	368.71	N/A	1.54	7.88	N/A	
	Combined Cycle 2	100	57.91	5.49	18.71	368.71	N/A	1.54	7.88	N/A	
	Simple Cycle	75	27.43	5.49	37.85	873.15	N/A	1.16	5.17	N/A	
	Combined Cycle 1	75	57.91	5.49	15.27	363.15	N/A	1.23	5.44	N/A	
	Combined Cycle 2	75	57.91	5.49	15.27	363.15	N/A	1.23	5.44	N/A	
	Simple Cycle	50	27.43	5.49	32.42	899.82	N/A	0.92	4.28	N/A	
	Combined Cycle 1	50	57.91	5.49	12.68	358.15	N/A	0.98	4.48	N/A	
	Combined Cycle 2	50	57.91	5.49	12.68	358.15	N/A	0.98	4.48	N/A	
	LSFO ^c	Simple Cycle	100	27.43	5.49	46.27	848.71	N/A	1.71	8.69	N/A
		Combined Cycle 1	100	57.91	5.49	21.28	402.59	N/A	1.79	9.13	N/A
		Combined Cycle 2	100	57.91	5.49	21.28	402.59	N/A	1.79	9.13	N/A
Simple Cycle		75	27.43	5.49	38.54	912.59	N/A	1.38	6.43	N/A	
Combined Cycle 1		75	57.91	5.49	16.70	397.04	N/A	1.45	6.78	N/A	
Combined Cycle 2		75	57.91	5.49	16.70	397.04	N/A	1.45	6.78	N/A	
Simple Cycle		50	27.43	5.49	33.06	922.04	N/A	1.08	9.32	N/A	
Combined Cycle 1		50	57.91	5.49	14.17	394.26	N/A	1.13	9.71	N/A	
Combined Cycle 2		50	57.91	5.49	14.17	394.26	N/A	1.13	9.71	N/A	

N/A indicates that the particular pollutant does not have an averaging period less than 24 hours.

^a The data used in the modeling analysis was based on the previous submittals referenced in Section 1.2.1 and summarized in spreadsheets included in Appendix A.

^b The sulfur content of the 2.0 natural gas in the modeling was assumed to be 2 grains of sulfur per 100 standard cubic feet.

^c The sulfur content of the LSFO in the modeling was assumed to be 0.0065%.

^d Values represent the emissions used in the SO₂ 3-hour air dispersion modeling. These are the highest emission rates at each given load over all ambient temperatures (i.e., 95°F, 59°F, and 20°F).

^e Values represent the emissions used in the CO 1 and 8-hour air dispersion modeling. These are the highest emission rates at each given load over all ambient temperatures (i.e., 95°F, 59°F, and 20°F).

Table 1-2
Representative (Enveloped) Stack Parameters and Pollutant Emissions ^a Used in ISCST3 Modeling Analysis
For Pollutants with Averaging Periods of 24 Hours

Operating Scenario/Fuel	ISCST3 Source ID	Load	Stack Height (m)	Stack Diameter (m)	Exit Velocity (m/s)	Exit Temp (K)	Pollutant Emission Rate (g/s)			
							NO _x	SO ₂ ^d	CO	PM ₁₀ ^e
2.0 natural gas ^b	Simple Cycle	100	27.43	5.49	45.04	855.93	N/A	1.44	N/A	1.13
	Combined Cycle 1	100	57.91	5.49	18.71	368.71	N/A	1.54	N/A	1.30
	Combined Cycle 2	100	57.91	5.49	18.71	368.71	N/A	1.54	N/A	1.30
	Simple Cycle	75	27.43	5.49	37.85	873.15	N/A	1.16	N/A	1.13
	Combined Cycle 1	75	57.91	5.49	15.27	363.15	N/A	1.23	N/A	1.20
	Combined Cycle 2	75	57.91	5.49	15.27	363.15	N/A	1.23	N/A	1.20
	Simple Cycle	50	27.43	5.49	32.42	899.82	N/A	0.92	N/A	1.13
	Combined Cycle 1	50	57.91	5.49	12.68	358.15	N/A	0.98	N/A	1.20
	Combined Cycle 2	50	57.91	5.49	12.68	358.15	N/A	0.98	N/A	1.20
LSFO ^c	Simple Cycle ^f	100	27.43	5.49	46.27	848.71	N/A	0.57	N/A	0.71
	Combined Cycle 1	100	57.91	5.49	21.28	402.59	N/A	1.79	N/A	2.26
	Combined Cycle 2	100	57.91	5.49	21.28	402.59	N/A	1.79	N/A	2.26
	Simple Cycle ^f	75	27.43	5.49	38.54	912.59	N/A	0.46	N/A	0.71
	Combined Cycle 1	75	57.91	5.49	16.70	397.04	N/A	1.45	N/A	2.26
	Combined Cycle 2	75	57.91	5.49	16.70	397.04	N/A	1.45	N/A	2.26
	Simple Cycle ^f	50	27.43	5.49	33.06	922.04	N/A	0.36	N/A	0.71
	Combined Cycle 1	50	57.91	5.49	14.17	394.26	N/A	1.13	N/A	2.26
	Combined Cycle 2	50	57.91	5.49	14.17	394.26	N/A	1.13	N/A	2.26
	Simple Cycle ^g	100	27.43	5.49	46.27	848.71	N/A	1.71	N/A	2.14
	Simple Cycle ^g	75	27.43	5.49	38.54	912.59	N/A	1.38	N/A	2.14
	Simple Cycle ^g	50	27.43	5.49	33.06	922.04	N/A	1.08	N/A	2.14

N/A indicates that the particular pollutant does not have an averaging period less than 24 hours.

^a The data used in the modeling analysis was based on the previous submittals referenced in Section 1.2.1 and summarized in spreadsheets included in Appendix A.

^b The sulfur content of the 2.0 natural gas in the modeling was assumed to be 2 grains of sulfur per 100 standard cubic feet.

^c The sulfur content of the LSFO in the modeling was assumed to be 0.0065%.

^d Values represent the emissions used in the SO₂ 24-hour air dispersion modeling. These are the highest emission rates at each given load over all ambient temperatures (i.e., 95°F, 59°F, and 20°F).

^e Values represent the emissions used in the PM₁₀ 24-hour air dispersion modeling. These are the highest emission rates at each given load over all ambient temperatures (i.e., 95°F, 59°F, and 20°F).

^f The simple cycle unit was limited to operating 8 hours/day on LSFO when the combined cycle units are also operating on LSFO for the entire day.

^g Additionally, with the limitation of simple cycle operation on LSFO when the combined cycle units are also operating on LSFO, the simple cycle unit was separately modeled alone operating on fuel oil for the entire day (i.e., without the simultaneous operation of the combined cycle units on LSFO for 24 hours/day).

Table 1-3
 Representative (Enveloped) Stack Parameters and Pollutant Emissions ^a Used in ISCST3 Modeling Analysis
 For Pollutants with Annual Averaging Periods

Operating Scenario/Fuel	ISCST3 Source ID	Load	Stack Height (m)	Stack Diameter (m)	Exit Velocity (m/s)	Exit Temp (K)	Pollutant Emission Rate (g/s)			
							NO _x ^c	SO ₂ ^c	CO	PM ₁₀ ^c
Annual Operation ^b	Simple Cycle	100	27.43	5.49	47.78	875.37	8.85	0.76	N/A	0.73
	Combined Cycle 1	100	57.91	5.49	20.15	368.71	4.29	1.50	N/A	1.34
	Combined Cycle 2	100	57.91	5.49	20.15	368.71	4.29	1.50	N/A	1.34
	Simple Cycle	75	27.43	5.49	39.54	888.15	7.09	0.61	N/A	0.73
	Combined Cycle 1	75	57.91	5.49	16.18	363.15	3.42	1.18	N/A	1.32
	Combined Cycle 2	75	57.91	5.49	16.18	363.15	3.42	1.18	N/A	1.32
	Simple Cycle	50	27.43	5.49	33.69	913.15	5.58	0.49	N/A	0.73
	Combined Cycle 1	50	57.91	5.49	13.23	358.15	2.73	0.95	N/A	1.32
	Combined Cycle 2	50	57.91	5.49	13.23	358.15	2.73	0.95	N/A	1.32

N/A indicates that the particular pollutant does not have an averaging period less than 24 hours.

^a The data used in the modeling analysis was based on the previous submittals referenced in Section 1.2.1 and summarized in spreadsheets included in Appendix A.

^b Annual operation assumes a combination of 2.0 natural gas and LSFO operation based on the proposed permit limits of 4,750 hours of 2.0 natural gas operation (of which 1,000 of those hours can be on LSFO) per year for the simple cycle unit and 8,760 hours of 2.0 natural gas operation (of which 1,000 of those hours can be on LSFO) operation per year for each combined cycle unit.

Additionally, the sulfur content of the 2.0 natural gas in the modeling was assumed to be 2 grains of sulfur per 100 standard cubic feet and the sulfur content of the LSFO in the modeling was assumed to be 0.0065%.

^c Values represent the emissions from the annual average ambient temperature cases of 59°F averaged for the respective hours of operation mentioned in footnote b.

was used along the Generating Station's fence line, and a 100 m fine grid was used at the maximum impact receptors. Figure 1-1 illustrates the nested rectangular grid, fence line receptors, and the relative location of the emission sources and downwash structures. The flat terrain option was used for all receptor points.

1.2.6 Meteorological Data

The ISCST3 air dispersion model requires hourly input of specific surface and upper-air meteorological data. These data include the wind flow vector, wind speed, ambient temperature, stability category, and the mixing height. Five years (1984-1988) of surface and upper air meteorological data from Jacksonville, Florida and Waycross, Georgia, respectively, were used in the ISCST3 air dispersion modeling analysis. These meteorological data were downloaded from EPA's SCRAM web site and processed with PCRAMMET to combine the surface and mixing height data, interpolate hourly mixing heights from the twice-daily mixing heights, and calculate atmospheric stability class.

1.3 Model Results

In accordance with the submitted modeling protocol, ISCST3 air dispersion modeling was performed (as described in the preceding sections) using the enveloped emission rates for NO_x, SO₂, CO, and PM₁₀ for each applicable averaging period. Tables 1-4 through 1-11 present the results for the 5 year refined modeling period (1984-1988) for each pollutant and applicable averaging period. The underlined concentrations in each table represent the maximum modeled predicted impacts in each case. As the tables indicate, the Proposed Project's maximum predicted concentrations are less than the PSD Class II Significant Impact Levels (SILs) for each pollutant and applicable averaging period. Therefore, under the PSD program, no further air quality impact analyses (i.e., PSD increment and NAAQS analyses) are required.

Additionally, the maximum predicted concentrations are less than the pre-construction monitoring de minimis levels for each pollutant and applicable averaging period. Therefore, by this application, the applicant requests an exemption from the PSD pre-construction monitoring requirements.

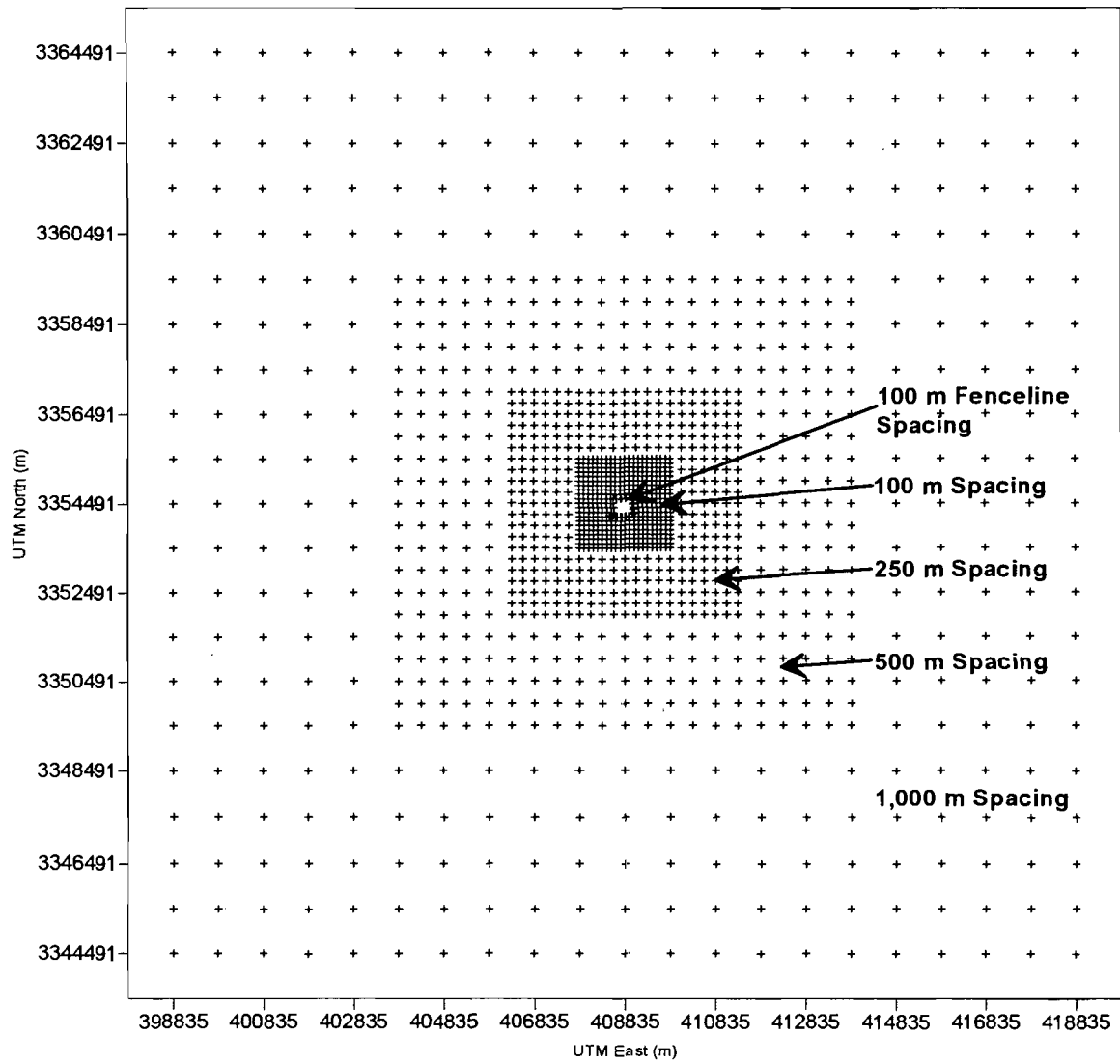


Figure 1-1
Class II Receptor Location Plot

Table 1-4
ISCST3 Model Predicted Maximum 1-hour Concentrations of CO

Year	Fuel ^a	Load ^b	Maximum Predicted Conc. ($\mu\text{g}/\text{m}^3$)	PSD Class II Significant Impact Level ($\mu\text{g}/\text{m}^3$)	Exceed Threshold? (YES/NO)
1984	2.0 natural gas	100	75.08	2,000	NO
		75	84.32	2,000	NO
		50	86.66	2,000	NO
	LSFO	100	85.98	2,000	NO
		75	98.94	2,000	NO
		50	179.04	2,000	NO
1985	2.0 natural gas	100	75.71	2,000	NO
		75	75.92	2,000	NO
		50	73.12	2,000	NO
	LSFO	100	90.98	2,000	NO
		75	90.99	2,000	NO
		50	154.20	2,000	NO
1986	2.0 natural gas	100	38.83	2,000	NO
		75	45.18	2,000	NO
		50	50.48	2,000	NO
	LSFO	100	39.73	2,000	NO
		75	51.45	2,000	NO
		50	99.98	2,000	NO
1987	2.0 natural gas	100	103.88	2,000	NO
		75	108.36	2,000	NO
		50	108.29	2,000	NO
	LSFO	100	117.59	2,000	NO
		75	126.43	2,000	NO
		50	<u>222.19</u>	2,000	NO
1988	2.0 natural gas	100	75.26	2,000	NO
		75	77.33	2,000	NO
		50	75.07	2,000	NO
	LSFO	100	90.66	2,000	NO
		75	92.50	2,000	NO
		50	157.87	2,000	NO

^a The sulfur content of the 2.0 natural gas in the modeling was assumed to be 2 grains of sulfur per 100 standard cubic feet and the sulfur content of the LSFO in the modeling was assumed to be 0.0065%.

^b Each load contains the simple cycle and the two combined cycle units operating simultaneously.

Table 1-5
ISCST3 Model Predicted Maximum 8-hour Concentrations of CO

Year	Fuel ^a	Load ^b	Maximum Predicted Conc. ($\mu\text{g}/\text{m}^3$)	PSD Class II Significant Impact Level ($\mu\text{g}/\text{m}^3$)	Exceed Threshold? (YES/NO)
1984	2.0 natural gas	100	27.54	500	NO
		75	31.29	500	NO
		50	33.58	500	NO
	LSFO	100	28.71	500	NO
		75	35.12	500	NO
		50	66.27	500	NO
1985	2.0 natural gas	100	12.65	500	NO
		75	15.88	500	NO
		50	23.94	500	NO
	LSFO	100	15.16	500	NO
		75	16.51	500	NO
		50	43.35	500	NO
1986	2.0 natural gas	100	8.57	500	NO
		75	12.01	500	NO
		50	16.45	500	NO
	LSFO	100	7.37	500	NO
		75	12.25	500	NO
		50	30.18	500	NO
1987	2.0 natural gas	100	16.23	500	NO
		75	17.62	500	NO
		50	19.51	500	NO
	LSFO	100	17.27	500	NO
		75	19.68	500	NO
		50	38.08	500	NO
1988	2.0 natural gas	100	21.97	500	NO
		75	26.90	500	NO
		50	31.21	500	NO
	LSFO	100	21.38	500	NO
		75	29.21	500	NO
		50	59.92	500	NO

^a The sulfur content of the 2.0 natural gas in the modeling was assumed to be 2 grains of sulfur per 100 standard cubic feet and the sulfur content of the LSFO in the modeling was assumed to be 0.0065%.

^b Each load contains the simple cycle and the two combined cycle units operating simultaneously.

Table 1-6
ISCST3 Model Predicted Maximum 3-hour Concentrations of SO₂

Year	Fuel ^a	Load ^b	Maximum Predicted Conc. (µg/m ³)	PSD Class II Significant Impact Level (µg/m ³)	Exceed Threshold? (YES/NO)
1984	2.0 natural gas	100	7.46	25	NO
		75	9.44	25	NO
		50	9.85	25	NO
	LSFO	100	7.38	25	NO
		75	10.24	25	NO
		50	10.61	25	NO
1985	2.0 natural gas	100	5.43	25	NO
		75	5.68	25	NO
		50	6.10	25	NO
	LSFO	100	5.96	25	NO
		75	6.51	25	NO
		50	6.08	25	NO
1986	2.0 natural gas	100	3.13	25	NO
		75	4.91	25	NO
		50	6.60	25	NO
	LSFO	100	2.90	25	NO
		75	4.71	25	NO
		50	6.43	25	NO
1987	2.0 natural gas	100	7.75	25	NO
		75	8.59	25	NO
		50	8.40	25	NO
	LSFO	100	8.05	25	NO
		75	9.44	25	NO
		50	9.11	25	NO
1988	2.0 natural gas	100	6.89	25	NO
		75	9.11	25	NO
		50	10.18	25	NO
	LSFO	100	6.43	25	NO
		75	9.47	25	NO
		50	10.55	25	NO

^a The sulfur content of the 2.0 natural gas in the modeling was assumed to be 2 grains of sulfur per 100 standard cubic feet and the sulfur content of the LSFO in the modeling was assumed to be 0.0065%.

^b Each load contains the simple cycle and the two combined cycle units operating simultaneously.

**Table 1-7
ISCST3 Model Predicted Maximum 24-hour Concentrations of SO₂**

Year	Fuel ^a	Load ^b	Maximum Predicted Conc. (µg/m ³)	PSD Class II Significant Impact Level (µg/m ³)	Exceed Threshold? (YES/NO)
1984	2.0 natural gas	100	2.46	5	NO
		75	3.10	5	NO
		50	3.44	5	NO
	LSFO	100	1.38	5	NO
		75	1.84	5	NO
		50	1.92	5	NO
	LSFO	100 ^c	1.32	5	NO
		75 ^c	2.03	5	NO
		50 ^c	2.34	5	NO
1985	2.0 natural gas	100	1.47	5	NO
		75	2.27	5	NO
		50	3.17	5	NO
	LSFO	100	1.09	5	NO
		75	1.53	5	NO
		50	1.87	5	NO
	LSFO	100 ^c	0.84	5	NO
		75 ^c	0.99	5	NO
		50 ^c	1.64	5	NO
1986	2.0 natural gas	100	0.70	5	NO
		75	1.10	5	NO
		50	1.45	5	NO
	LSFO	100	0.49	5	NO
		75	0.71	5	NO
		50	0.83	5	NO
	LSFO	100 ^c	0.28	5	NO
		75 ^c	0.50	5	NO
		50 ^c	0.85	5	NO
1987	2.0 natural gas	100	1.66	5	NO
		75	1.95	5	NO
		50	2.15	5	NO
	LSFO	100	0.94	5	NO
		75	1.19	5	NO
		50	1.22	5	NO
	LSFO	100 ^c	0.93	5	NO
		75 ^c	1.26	5	NO
		50 ^c	1.44	5	NO
1988	2.0 natural gas	100	1.53	5	NO
		75	2.04	5	NO
		50	2.28	5	NO
	LSFO	100	0.89	5	NO
		75	1.19	5	NO
		50	1.25	5	NO
	LSFO	100 ^c	0.79	5	NO
		75 ^c	1.38	5	NO
		50 ^c	1.64	5	NO

^a The sulfur content of the 2.0 natural gas in the modeling was assumed to be 2 grains of sulfur per 100 standard cubic feet and the sulfur content of the LSFO in the modeling was assumed to be 0.0065%.

^b Each load contains the simple cycle and the two combined cycle units operating simultaneously unless otherwise noted. The simple cycle unit was limited to operating 8 hours/day on LSFO when the combined cycle units are also operating on LSFO for the entire day. No additional 2.0 natural gas was included for the simple cycle unit.

^c These values represent the simple cycle unit operating 24 hours/day on LSFO without the simultaneous operation of the combined cycle units.

Table 1-8
ISCST3 Model Predicted Maximum 24-hour Concentrations of PM₁₀

Year	Fuel ^a	Load ^b	Maximum Predicted Conc. (µg/m ³)	PSD Class II Significant Impact Level (µg/m ³)	Exceed Threshold? (YES/NO)
1984	2.0 natural gas	100	2.00	5	NO
		75	3.02	5	NO
		50	4.22	5	NO
	LSFO	100	1.73	5	NO
		75	2.86	5	NO
		50	3.83	5	NO
	LSFO	100 ^c	1.65	5	NO
		75 ^c	3.14	5	NO
		50 ^c	4.65	5	NO
1985	2.0 natural gas	100	1.23	5	NO
		75	2.21	5	NO
		50	3.89	5	NO
	LSFO	100	1.37	5	NO
		75	2.37	5	NO
		50	3.72	5	NO
	LSFO	100 ^c	1.06	5	NO
		75 ^c	1.53	5	NO
		50 ^c	3.25	5	NO
1986	2.0 natural gas	100	0.58	5	NO
		75	1.07	5	NO
		50	1.78	5	NO
	LSFO	100	0.62	5	NO
		75	1.10	5	NO
		50	1.66	5	NO
	LSFO	100 ^c	0.35	5	NO
		75 ^c	0.78	5	NO
		50 ^c	1.69	5	NO
1987	2.0 natural gas	100	1.35	5	NO
		75	1.91	5	NO
		50	2.64	5	NO
	LSFO	100	1.19	5	NO
		75	1.84	5	NO
		50	2.43	5	NO
	LSFO	100 ^c	1.17	5	NO
		75 ^c	1.96	5	NO
		50 ^c	2.86	5	NO
1988	2.0 natural gas	100	1.25	5	NO
		75	1.99	5	NO
		50	2.80	5	NO
	LSFO	100	1.12	5	NO
		75	1.85	5	NO
		50	2.49	5	NO
	LSFO	100 ^c	0.99	5	NO
		75 ^c	2.14	5	NO
		50 ^c	3.26	5	NO

^a The sulfur content of the 2.0 natural gas in the modeling was assumed to be 2 grains of sulfur per 100 standard cubic feet and the sulfur content of the LSFO in the modeling was assumed to be 0.0065%.

^b Each load contains the simple cycle and the two combined cycle units operating simultaneously unless otherwise noted. The simple cycle unit was limited to operating 8 hours/day on LSFO when the combined cycle units are also operating on LSFO for the entire day. No additional 2.0 natural gas was included for the simple cycle unit.

^c These values represent the simple cycle unit operating 24 hours/day on LSFO without the simultaneous operation of the combined cycle units.

Table 1-9
ISCST3 Model Predicted Maximum Annual ^a Concentrations of NO_x

Year	Load ^b	Maximum Predicted Conc. (µg/m ³)	PSD Class II Significant Impact Level (µg/m ³)	Exceed Threshold? (YES/NO)
1984	100	0.08	1	NO
	75	0.13	1	NO
	50	0.18	1	NO
1985	100	0.06	1	NO
	75	0.10	1	NO
	50	0.16	1	NO
1986	100	0.06	1	NO
	75	0.09	1	NO
	50	0.12	1	NO
1987	100	0.11	1	NO
	75	0.19	1	NO
	50	0.26	1	NO
1988	100	0.09	1	NO
	75	0.16	1	NO
	50	0.22	1	NO

^a Annual concentrations are derived from a combination of 2.0 natural gas and LSFO operation based on the proposed permit limits of 4,750 hours of 2.0 natural gas operation (of which 1,000 of those hours can be on LSFO) per year for the simple cycle unit and 8,760 hours of 2.0 natural gas operation (of which 1,000 of those hours can be on LSFO) operation per year for each combined cycle unit.

^b Each load contains the simple cycle and two combined cycle units operating simultaneously.

Table 1-10
ISCST3 Model Predicted Maximum Annual ^a Concentrations of SO₂

Year	Load ^b	Maximum Predicted Conc. (µg/m ³)	PSD Class II Significant Impact Level (µg/m ³)	Exceed Threshold? (YES/NO)
1984	100	0.02	1	NO
	75	0.03	1	NO
	50	0.04	1	NO
1985	100	0.02	1	NO
	75	0.03	1	NO
	50	0.04	1	NO
1986	100	0.02	1	NO
	75	0.03	1	NO
	50	0.04	1	NO
1987	100	0.03	1	NO
	75	0.05	1	NO
	50	0.07	1	NO
1988	100	0.03	1	NO
	75	0.04	1	NO
	50	0.05	1	NO

^a Annual concentrations are derived from combination of 2.0 natural gas and LSFO operation based on the proposed permit limits of 4,750 hours of 2.0 natural gas operation (of which 1,000 of those hours can be on LSFO) per year for the simple cycle unit and 8,760 hours of 2.0 natural gas operation (of which 1,000 of those hours can be on LSFO) operation per year for each combined cycle unit.

^b Each load contains the simple cycle and two combined cycle units operating simultaneously.

Table 1-11
ISCST3 Model Predicted Maximum Annual ^a Concentrations of PM₁₀

Year	Load ^b	Maximum Predicted Conc. (µg/m ³)	PSD Class II Significant Impact Level (µg/m ³)	Exceed Threshold? (YES/NO)
1984	100	0.02	1	NO
	75	0.03	1	NO
	50	0.05	1	NO
1985	100	0.01	1	NO
	75	0.03	1	NO
	50	0.06	1	NO
1986	100	0.02	1	NO
	75	0.04	1	NO
	50	0.06	1	NO
1987	100	0.03	1	NO
	75	0.06	1	NO
	50	<u>0.09</u>	1	NO
1988	100	0.02	1	NO
	75	0.05	1	NO
	50	0.08	1	NO

^a Annual concentrations are derived from a combination of 2.0 natural gas and LSFO operation based on the proposed permit limits of 4,750 hours of 2.0 natural gas operation (of which 1,000 of those hours can be on LSFO) per year for the simple cycle unit and 8,760 hours of 2.0 natural gas operation (of which 1,000 of those hours can be on LSFO) operation per year for each combined cycle unit.

^b Each load contains the simple cycle and two combined cycle units operating simultaneously.

2.0 Class I Area Impact Analyses

Class I areas are afforded special attention based on their value from a natural, scenic, recreational, or historic perspective. Emission sources subject to PSD review are analyzed to determine their potential for deteriorating the particular properties that make these areas worthy of their Class I designation. These properties are known as air quality related values (AQRVs), and typically include such attributes as flora and fauna, visibility, and scenic value.

As shown in Figure 2-1, the Generating Station is located approximately 34 km southeast of the Federal PSD Class I Okefenokee National Wildlife Refuge (ONWR). The area is designated as a mandatory Class I area, under the jurisdiction of the Fish and Wildlife Service as their Federal Land Manager (FLM). The FLM typically establishes indicators and thresholds to measure a source's potential for impacting the AQRV's of a Class I area. These indicators are typically measured by assessing the Proposed Project's impact on air the quality and visibility/regional haze.

The following sections discuss the Proposed Project's impacts on ground level impacts and visibility at those portions of the nearby Class I area that lie within 50 km from the Generating Station as that is the generally accepted limitation of the models used in these analyses. Those portions of the Class I area that lie beyond 50 km from the Generating Station were treated with a more advanced air dispersion model approved for distances beyond 50 km. Those analyses can be found in Attachment 2.

2.1 Ground-Level Impact Analysis

Air dispersion modeling was performed to determine the Proposed Project's maximum predicted impact at the Class I areas. The ISCST3 air dispersion model was used in the flat terrain mode to determine the maximum predicted impacts of NO_x, SO₂, and PM₁₀ at receptors placed on that portion of the Class I area that lies within 50 km from the Generating Station. As presented in the most recent analyses submitted to the FDEP, over 1,110 receptors spaced every 500 m were used in the analysis. Figure 2-2 illustrates the receptors used in this Class I area analysis. The 5 year meteorological data set, model options, and operating scenarios used in the refined modeling analysis presented in Section 1, were also used in the Class I air quality impact analyses. This includes the source input parameters presented in Tables 1-1 through 1-3.

Tables 2-1 through 2-6 present the results of the Class I areas air dispersion modeling for each pollutant and applicable averaging period. The maximum predicted concentrations are presented for each year and compared with the Class I SILs. The Class I SILs were calculated as 4 percent of the PSD Class I increments. As the results in these tables indicate, the maximum predicted concentrations of all pollutants and averaging periods are less than the applicable Class I SILs for the Class I area. Therefore, under the PSD program, no further air quality impact analysis (i.e., PSD increment analysis) is required.

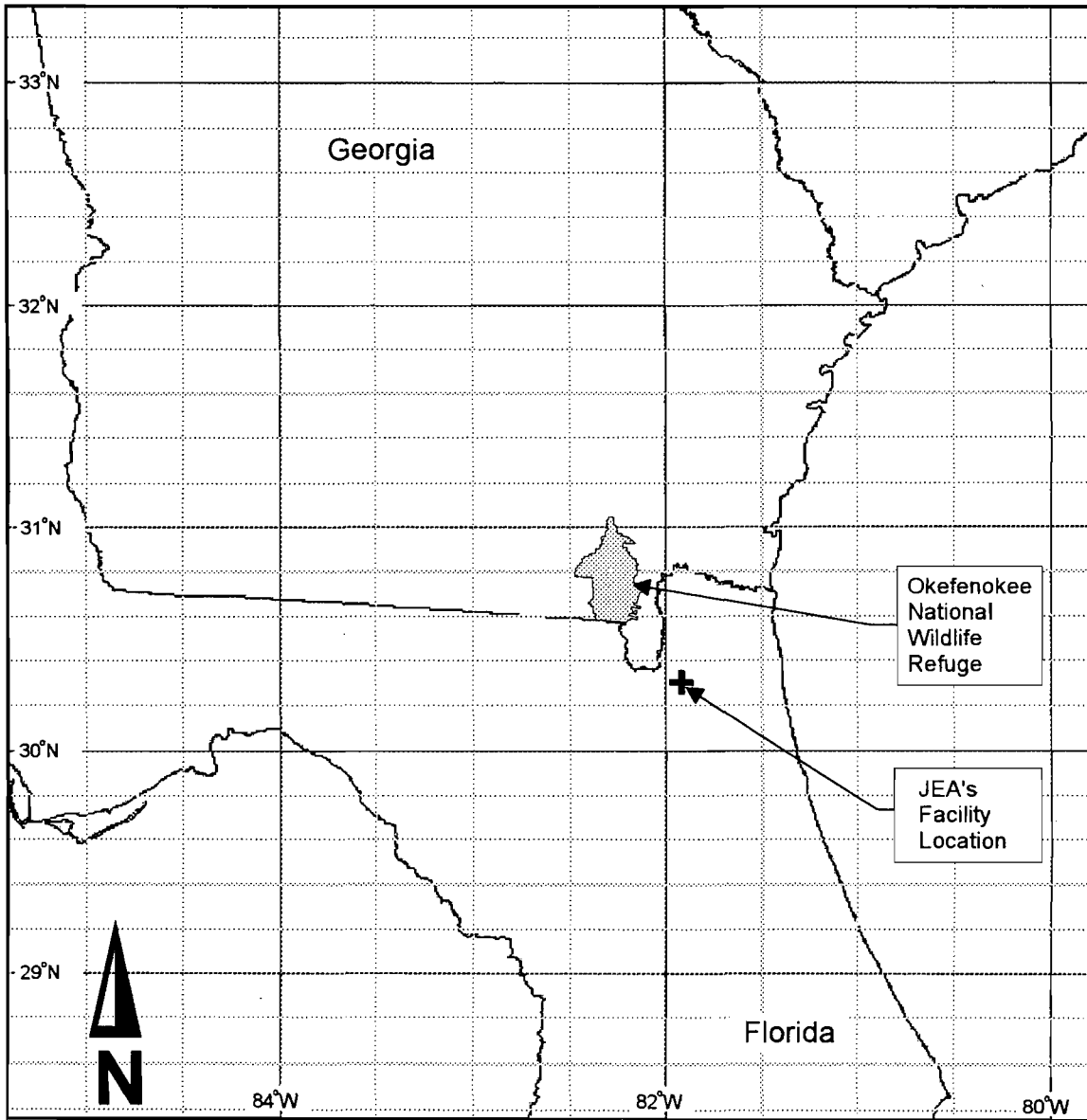


Figure 2-1
 Generating Station Location With Respect To Okefenokee

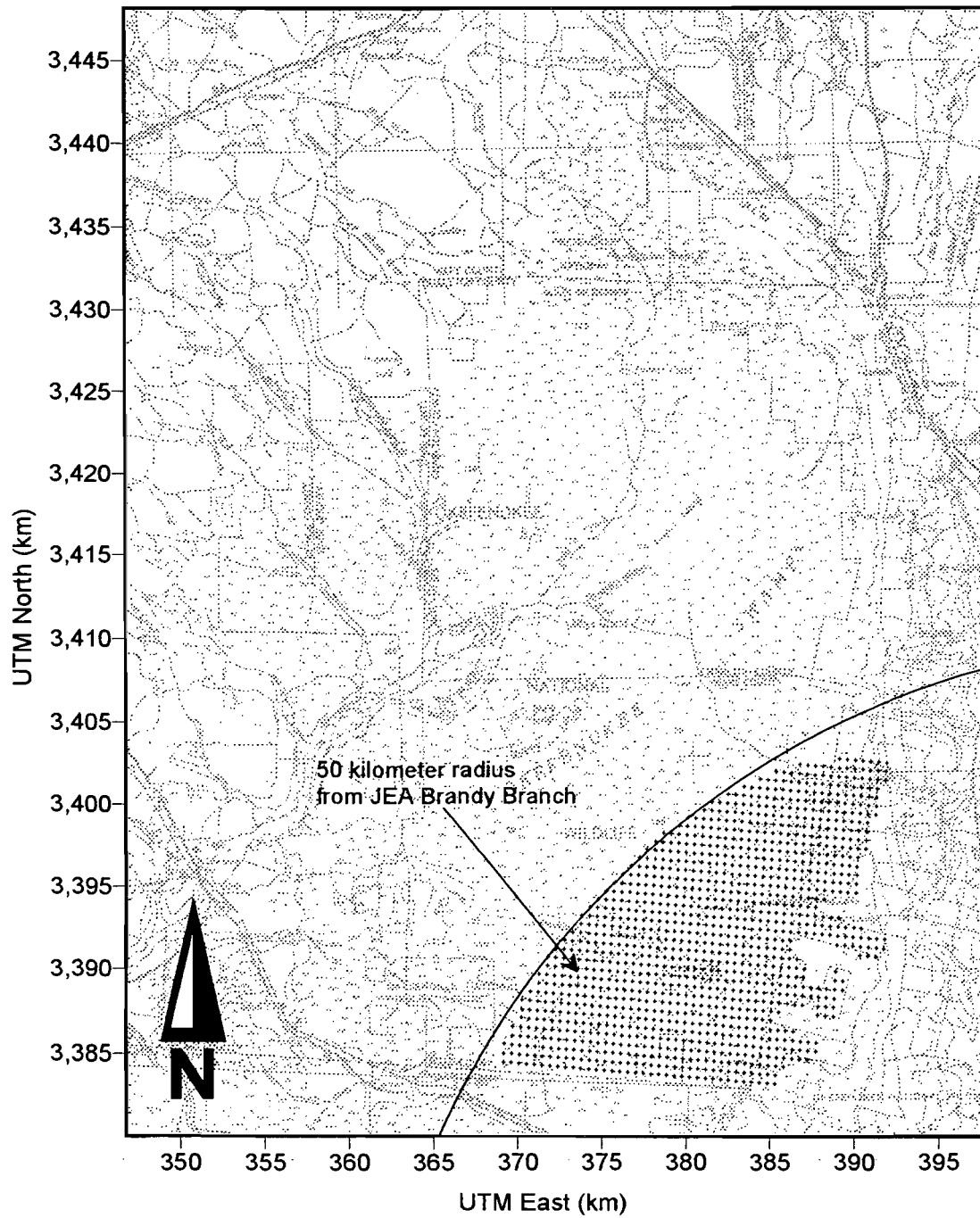


Figure 2-2
Okefenokee Receptors within 50 km

Table 2-1
ISCST3 Model Predicted Maximum Annual^a Concentrations of NO_x

Year	Load ^b	Maximum Predicted Conc. (µg/m ³)	PSD Class I Significant Impact Level (µg/m ³)	Exceed Threshold? (YES/NO)
1984	100	0.02	0.1	NO
	75	0.02	0.1	NO
	50	0.01	0.1	NO
1985	100	0.01	0.1	NO
	75	0.01	0.1	NO
	50	0.01	0.1	NO
1986	100	0.02	0.1	NO
	75	0.01	0.1	NO
	50	0.01	0.1	NO
1987	100	0.02	0.1	NO
	75	0.02	0.1	NO
	50	0.01	0.1	NO
1988	100	0.02	0.1	NO
	75	0.02	0.1	NO
	50	0.02	0.1	NO

^a Annual concentrations are derived from a combination of 2.0 natural gas and LSFO operation based on the proposed permit limits of 4,750 hours of 2.0 natural gas operation and 1,000 hours of LSFO operation per year for the simple cycle unit and 8,760 hours of 2.0 natural gas operation and 1,000 hours of LSFO operation per year for each combined cycle unit.

^b Each load contains the simple cycle and two combined cycle units operating simultaneously.

Table 2-2
ISCST3 Model Predicted Maximum Annual ^a Concentrations of SO₂

Year	Load ^b	Maximum Predicted Conc. (µg/m ³)	PSD Class I Significant Impact Level (µg/m ³)	Exceed Threshold? (YES/NO)
1984	100	0.005	0.08	NO
	75	0.005	0.08	NO
	50	0.004	0.08	NO
1985	100	0.004	0.08	NO
	75	0.004	0.08	NO
	50	0.003	0.08	NO
1986	100	0.004	0.08	NO
	75	0.004	0.08	NO
	50	0.003	0.08	NO
1987	100	0.005	0.08	NO
	75	0.004	0.08	NO
	50	0.004	0.08	NO
1988	100	0.006	0.08	NO
	75	0.005	0.08	NO
	50	0.005	0.08	NO

^a Annual concentrations are derived from a combination of 2.0 natural gas and LSFO operation based on the proposed permit limits of 4,750 hours of 2.0 natural gas operation and 1,000 hours of LSFO operation per year for the simple cycle unit and 8,760 hours of 2.0 natural gas operation and 1,000 hours of LSFO operation per year for each combined cycle unit.

^b Each load contains the simple cycle and two combined cycle units operating simultaneously.

Table 2-3
ISCST3 Model Predicted Maximum Annual ^a Concentrations of PM₁₀

Year	Load ^b	Maximum Predicted Conc. (µg/m ³)	PSD Class I Significant Impact Level (µg/m ³)	Exceed Threshold? (YES/NO)
1984	100	0.005	0.16	NO
	75	0.005	0.16	NO
	50	0.006	0.16	NO
1985	100	0.004	0.16	NO
	75	0.004	0.16	NO
	50	0.004	0.16	NO
1986	100	0.004	0.16	NO
	75	0.004	0.16	NO
	50	0.005	0.16	NO
1987	100	0.004	0.16	NO
	75	0.005	0.16	NO
	50	0.005	0.16	NO
1988	100	0.006	0.16	NO
	75	0.006	0.16	NO
	50	<u>0.007</u>	0.16	NO

^a Annual concentrations are derived from a combination of 2.0 natural gas and LSFO operation based on the proposed permit limits of 4,750 hours of 2.0 natural gas operation and 1,000 hours of LSFO operation per year for the simple cycle unit and 8,760 hours of 2.0 natural gas operation and 1,000 hours of LSFO operation per year for each combined cycle unit.

^b Each load contains the simple cycle and two combined cycle units operating simultaneously.

Table 2-4
ISCST3 Model Predicted Maximum 3-hour Concentrations of SO₂

Year	Fuel ^a	Load ^b	Maximum Predicted Conc. (µg/m ³)	PSD Class I Significant Impact Level (µg/m ³)	Exceed Threshold? (YES/NO)
1984	2.0 natural gas	100	0.32	1	NO
		75	0.30	1	NO
		50	0.28	1	NO
	LSFO	100	0.32	1	NO
		75	0.29	1	NO
		50	0.25	1	NO
1985	2.0 natural gas	100	0.38	1	NO
		75	0.33	1	NO
		50	0.28	1	NO
	LSFO	100	0.40	1	NO
		75	0.35	1	NO
		50	0.29	1	NO
1986	2.0 natural gas	100	0.47	1	NO
		75	0.41	1	NO
		50	0.34	1	NO
	LSFO	100	0.50	1	NO
		75	0.44	1	NO
		50	0.37	1	NO
1987	2.0 natural gas	100	0.42	1	NO
		75	0.36	1	NO
		50	0.31	1	NO
	LSFO	100	0.43	1	NO
		75	0.38	1	NO
		50	0.32	1	NO
1988	2.0 natural gas	100	0.38	1	NO
		75	0.33	1	NO
		50	0.28	1	NO
	LSFO	100	0.39	1	NO
		75	0.35	1	NO
		50	0.29	1	NO

^a The sulfur content of the 2.0 natural gas in the modeling was assumed to be 2 grains of sulfur per 100 standard cubic feet and the sulfur content of the LSFO in the modeling was assumed to be 0.0065%.

^b Each load contains the simple cycle and the two combined cycle units operating simultaneously.

Table 2-5
ISCST3 Model Predicted Maximum 24-hour Concentrations of SO₂

Year	Fuel ^a	Load ^b	Maximum Predicted Conc. (µg/m ³)	PSD Class 1 Significant Impact Level (µg/m ³)	Exceed Threshold? (YES/NO)
1984	2.0 natural gas	100	0.10	0.2	NO
		75	0.09	0.2	NO
		50	0.08	0.2	NO
	LSFO	100	0.08	0.2	NO
		75	0.08	0.2	NO
		50	0.07	0.2	NO
	LSFO	100 ^c	0.02	0.2	NO
		75 ^c	0.02	0.2	NO
		50 ^c	0.02	0.2	NO
1985	2.0 natural gas	100	0.10	0.2	NO
		75	0.08	0.2	NO
		50	0.07	0.2	NO
	LSFO	100	0.07	0.2	NO
		75	0.06	0.2	NO
		50	0.07	0.2	NO
	LSFO	100 ^c	0.02	0.2	NO
		75 ^c	0.02	0.2	NO
		50 ^c	0.01	0.2	NO
1986	2.0 natural gas	100	0.16	0.2	NO
		75	0.14	0.2	NO
		50	0.12	0.2	NO
	LSFO	100	0.15	0.2	NO
		75	0.13	0.2	NO
		50	0.11	0.2	NO
	LSFO	100 ^c	0.04	0.2	NO
		75 ^c	0.04	0.2	NO
		50 ^c	0.03	0.2	NO
1987	2.0 natural gas	100	0.08	0.2	NO
		75	0.07	0.2	NO
		50	0.06	0.2	NO
	LSFO	100	0.07	0.2	NO
		75	0.06	0.2	NO
		50	0.05	0.2	NO
	LSFO	100 ^c	0.02	0.2	NO
		75 ^c	0.02	0.2	NO
		50 ^c	0.02	0.2	NO
1988	2.0 natural gas	100	0.11	0.2	NO
		75	0.10	0.2	NO
		50	0.09	0.2	NO
	LSFO	100	0.10	0.2	NO
		75	0.09	0.2	NO
		50	0.08	0.2	NO
	LSFO	100 ^c	0.02	0.2	NO
		75 ^c	0.02	0.2	NO
		50 ^c	0.02	0.2	NO

^a The sulfur content of the 2.0 natural gas in the modeling was assumed to be 2 grains of sulfur per 100 standard cubic feet and the sulfur content of the LSFO in the modeling was assumed to be 0.0065%.

^b Each load contains the simple cycle and the two combined cycle units operating simultaneously unless otherwise noted. The simple cycle unit was limited to operating 8 hours/day on LSFO when the combined cycle units are also operating on LSFO for the entire day.

^c These values represent the simple cycle unit operating 24 hours/day on LSFO without the simultaneous operation of the combined cycle units.

Table 2-6
ISCST3 Model Predicted Maximum 24-hour Concentrations of PM₁₀

Year	Fuel ^a	Load ^b	Maximum Predicted Conc. (µg/m ³)	PSD Class I Significant Impact Level (µg/m ³)	Exceed Threshold? (YES/NO)
1984	2.0 natural gas	100	0.08	0.32	NO
		75	0.09	0.32	NO
		50	0.09	0.32	NO
	LSFO	100	0.11	0.32	NO
		75	0.12	0.32	NO
		50	0.13	0.32	NO
	LSFO	100 ^c	0.03	0.32	NO
		75 ^c	0.03	0.32	NO
		50 ^c	0.03	0.32	NO
1985	2.0 natural gas	100	0.08	0.32	NO
		75	0.08	0.32	NO
		50	0.09	0.32	NO
	LSFO	100	0.09	0.32	NO
		75	0.10	0.32	NO
		50	0.13	0.32	NO
	LSFO	100 ^c	0.02	0.32	NO
		75 ^c	0.03	0.32	NO
		50 ^c	0.03	0.32	NO
1986	2.0 natural gas	100	0.14	0.32	NO
		75	0.14	0.32	NO
		50	0.15	0.32	NO
	LSFO	100	0.19	0.32	NO
		75	0.20	0.32	NO
		50	0.21	0.32	NO
	LSFO	100 ^c	0.05	0.32	NO
		75 ^c	0.06	0.32	NO
		50 ^c	0.07	0.32	NO
1987	2.0 natural gas	100	0.07	0.32	NO
		75	0.07	0.32	NO
		50	0.08	0.32	NO
	LSFO	100	0.08	0.32	NO
		75	0.10	0.32	NO
		50	0.11	0.32	NO
	LSFO	100 ^c	0.02	0.32	NO
		75 ^c	0.03	0.32	NO
		50 ^c	0.03	0.32	NO
1988	2.0 natural gas	100	0.09	0.32	NO
		75	0.10	0.32	NO
		50	0.11	0.32	NO
	LSFO	100	0.12	0.32	NO
		75	0.14	0.32	NO
		50	0.15	0.32	NO
	LSFO	100 ^c	0.02	0.32	NO
		75 ^c	0.03	0.32	NO
		50 ^c	0.03	0.32	NO

^a The sulfur content of the 2.0 natural gas in the modeling was assumed to be 2 grains of sulfur per 100 standard cubic feet and the sulfur content of the LSFO in the modeling was assumed to be 0.0065%.

^b Each load contains the simple cycle and the two combined cycle units operating simultaneously unless otherwise noted. The simple cycle unit was limited to operating 8 hours/day on LSFO when the combined cycle units are also operating on LSFO for the entire day.

^c These values represent the simple cycle unit operating 24 hours/day on LSFO without the simultaneous operation of the combined cycle units.

2.2 Visibility Analysis

The additional impact analysis requirements of a PSD permit application are concerned with visibility impairment within the Generating Station's impact area. The general components of a visibility impairment analysis include:

- Determine the visual quality of the area.
- Determine the potential for visibility impairment with a screening level assessment.
- If warranted, conduct a more in-depth analysis of the visibility impairment potential.

2.2.1 Visual Quality of the Area

The Generating Station is located in northeastern Florida, immediately surrounded by forest and grassland. The climate is characterized as nearly tropical with warm temperatures and abundant moisture. The high relative humidity and coastal influence generally result in moderate visibility with relatively low background visual ranges.

2.2.2 Visual Impairment Screening Assessment

A visibility impairment screening analysis was conducted in accordance with EPA's Workbook for Plume Visual Impact Screening and Analysis (EPA-450/4-88-015, September 1988, hereinafter referred to as the Workbook) for the portion of the Class I area located less than 50 km from the Generating Station in order to provide a conservative indication of the perceptibility of plumes from the Proposed Project's emission sources. The only Federal PSD Class I Area within 50 km is the ONWR located approximately 34 km northwest of the Generating Station. It should be noted, a regional haze analysis was conducted for that portion of the Class I area located greater than 50 km from the Generating Station and is contained in a separate report.

The analysis was performed using the VISCREEN model. In accordance with Workbook visual screening procedures, the VISCREEN plume visual impact screening model was used with default worst-case Level-1 visual screening parameters using the maximum estimated emission rates of NO_x and PM_{10} .

In accordance with EPA procedures, the plume visual impact screening model (VISCREEN) was utilized with input and default parameters appropriately chosen for this geographical region. The criteria for evaluating whether there is significant visibility impairment is whether the plume from a source has the potential to be perceptible to untrained observers under reasonable worst-case conditions. The majority of input parameter values were not changed from the VISCREEN default values as specified in the Workbook. However, background visual range, stability class, and windspeed parameters

have been changed to values more representative of the specific region and operating conditions of the Proposed Project, thereby producing a more realistic analysis. The situation-specific modeled values are described below:

Emissions. The worst-case maximum hourly emissions of LSFO for NO_x and PM₁₀ were used in the visibility analysis modeling. These values were obtained by first summing the NO_x emissions and then the PM₁₀ emission from the simple cycle and two combined cycle units.

Distances. The geometry of the Generating Station and the Okefenokee Wilderness Area make the source-observer and minimum source distance 34 km and the maximum source distance 80 km.

Background Visual Range. A background visual range value which is considered representative of the area was based on a telephone conversation with Mr. Bud Rolofson at the Fish and Wildlife Service in Denver, Colorado on January 15, 1999. The background visual range is 65 km.

Stability Class and Windspeed. The VISCREEN stability class default value of 'F' and windspeed default value of 1.0 meter per second (m/s) were found not to be representative of the general climatological conditions of the area in the vicinity of the Generating Station. Therefore, stability class information contained in the five years (1984-1988) of meteorological data that were used in the ISCST3 air dispersion modeling were analyzed to determine a more representative stability class. A frequency distribution for Stability Classes 1 through 7 was performed for each season of each of the five years of meteorological data. The results of the analysis show that 'D' Class stability, or neutral stability, is most common stability class contained within the five years of meteorological data.

To establish a more representative wind speed, climatological data were reviewed for this area. Windspeed values of 7.9 miles per hour (mph) (3.53 m/s) were given in the Local Climatological Data Annual Summaries for 1996, Part IV - Southern Region published by the National Oceanic and Atmospheric Administration (NOAA) for Jacksonville, Florida. This windspeed value was determined to be more representative of the windspeeds in the Generating Station area than the VISCREEN default value of 1.0 m/s.

2.2.3 VISCREEN Results

Based on the results of this analysis, the Proposed Project's plume visual impact passes the Level-2 analysis specified by the Workbook for a CLASS I area. Potential visual impairment from the Proposed Project's plume will not cause a notable problem or be perceptible to untrained observers. Therefore, further analyses to quantify the extent of any reductions in visibility due to emissions from the Proposed Project are not warranted based on the results of the Level-2 visual impairment screening analysis. The VISCREEN results can be found in Appendix B.

Appendix A
Vendor Performance
and Emissions Summary Sheets

Determination of Representative Emission and Stack Parameters and Potential to Emit Calculator

Simple Cycle Operation - Natural Gas				Simple Cycle Operation - Fuel Oil				Annual Operation																			
<p>Load 100 percent</p> <p>Case Name Case 1 Case 2 Case 3 Ambient Temp (F) 95 59 20</p> <p>Evap Cooler NO NO NO Duct Firing NO NO NO</p> <p>Exit Temp (F) 1144 1116 1081 Exit Velocity (ft/s) 147.76 156.75 164 Emissions (lb/h)</p> <p>NOX 71.20 79.20 84.80 CO 43.00 48.00 52.00 PM/PM10 9.00 9.00 9.00 SO2 9.70 10.70 11.40 VOC 2.60 2.80 3.00</p>				<p>Short-Term Enveloped Load Representative Emissions and Stack Parameters</p> <p>Load 100 percent</p> <p>Exit Temp (F) 1081.00 855.53 K Exit Velocity (ft/s) 147.76 45.04 m/s Emissions (lb/h)</p> <p>NOX 84.80 10.68 g/s CO 52.00 6.56 g/s PM/PM10 9.00 1.13 g/s SO2 11.40 1.44 g/s VOC 3.00 0.38 g/s</p>				<p>Annualized Enveloped Load Representative Emissions and Stack Parameters (59 Degrees)</p> <p>Load 100 percent</p> <p>Exit Temp (F) 1116.00 875.37 K Exit Velocity (ft/s) 156.75 47.78 m/s Emissions (lb/h)</p> <p>NOX 42.95 5.41 g/s CO 26.03 3.28 g/s PM/PM10 4.88 0.61 g/s SO2 5.80 0.73 g/s VOC 1.52 0.19 g/s</p>				<p>Load 100 percent</p> <p>Case Name Case 10 Case 11 Case 12 Ambient Temp (F) 95 59 20</p> <p>Evap Cooler NO NO NO Duct Firing NO NO NO</p> <p>Exit Temp (F) 1133 1098 1068 Exit Velocity (ft/s) 151.8 161.6 168.04 Emissions (lb/h)</p> <p>NOX 286.00 318.00 338.00 CO 59.00 65.00 69.00 PM/PM10 17.00 17.00 17.00 SO2 11.49 12.77 13.56 VOC 2.60 3.00 3.00</p>				<p>Short-Term Enveloped Load Representative Emissions and Stack Parameters</p> <p>Load 100 percent</p> <p>Exit Temp (F) 1068.00 848.71 K Exit Velocity (ft/s) 151.80 46.27 m/s Emissions (lb/h)</p> <p>NOX 338.00 42.59 g/s CO 69.00 8.69 g/s PM/PM10 17.00 2.14 g/s SO2 13.56 1.71 g/s VOC 3.00 0.38 g/s</p>				<p>Annualized Enveloped Load Representative Emissions and Stack Parameters (59 Degrees)</p> <p>Load 100 percent</p> <p>Exit Temp (F) 1098.00 865.37 K Exit Velocity (ft/s) 161.60 49.26 m/s Emissions (lb/h)</p> <p>NOX 36.30 4.57 g/s CO 7.42 0.93 g/s PM/PM10 1.94 0.24 g/s SO2 1.46 0.18 g/s VOC 0.34 0.04 g/s</p>				<p>Total Annual Fuel Enveloped Load Representative Emissions and Stack Parameters (59 Degrees)</p> <p>Load 100 percent</p> <p>Exit Temp (F) 1116.00 875.37 K Exit Velocity (ft/s) 156.75 47.78 m/s Emissions (lb/h)</p> <p>NOX 70.21 8.85 g/s CO 27.97 3.52 g/s PM/PM10 5.79 0.73 g/s SO2 6.04 0.76 g/s VOC 1.54 0.19 g/s</p>			
<p>Load 75 percent</p> <p>Case Name Case 4 Case 5 Case 6 Ambient Temp (F) 95 59 20</p> <p>Evap Cooler NO NO NO Duct Firing NO NO NO</p> <p>Exit Temp (F) 1170 1139 1112 Exit Velocity (ft/s) 124.17 129.71 133.13 Emissions (lb/h)</p> <p>NOX 58.40 63.20 67.20 CO 36.00 39.00 41.00 PM/PM10 9.00 9.00 9.00 SO2 7.90 8.60 9.20 VOC 2.20 2.20 2.40</p>				<p>Short-Term Enveloped Load Representative Emissions and Stack Parameters</p> <p>Load 75 percent</p> <p>Exit Temp (F) 1112.00 873.15 K Exit Velocity (ft/s) 124.17 37.85 m/s Emissions (lb/h)</p> <p>NOX 67.20 8.47 g/s CO 41.00 5.17 g/s PM/PM10 9.00 1.13 g/s SO2 9.20 1.16 g/s VOC 2.40 0.30 g/s</p>				<p>Annualized Enveloped Load Representative Emissions and Stack Parameters (59 Degrees)</p> <p>Load 75 percent</p> <p>Exit Temp (F) 1139.00 888.15 K Exit Velocity (ft/s) 129.71 39.54 m/s Emissions (lb/h)</p> <p>NOX 34.27 4.32 g/s CO 21.15 2.66 g/s PM/PM10 4.88 0.61 g/s SO2 4.66 0.59 g/s VOC 1.19 0.15 g/s</p>				<p>Load 75 percent</p> <p>Case Name Case 13 Case 14 Case 15 Ambient Temp (F) 95 59 20</p> <p>Evap Cooler NO NO NO Duct Firing NO NO NO</p> <p>Exit Temp (F) 1200 1194 1183 Exit Velocity (ft/s) 126.43 131.67 135.15 Emissions (lb/h)</p> <p>NOX 232.00 256.00 271.00 CO 47.00 50.00 51.00 PM/PM10 17.00 17.00 17.00 SO2 9.40 10.36 10.98 VOC 2.20 2.20 2.40</p>				<p>Short-Term Enveloped Load Representative Emissions and Stack Parameters</p> <p>Load 75 percent</p> <p>Exit Temp (F) 1183.00 912.59 K Exit Velocity (ft/s) 126.43 38.54 m/s Emissions (lb/h)</p> <p>NOX 271.00 34.15 g/s CO 51.00 6.43 g/s PM/PM10 17.00 2.14 g/s SO2 10.98 1.38 g/s VOC 2.40 0.30 g/s</p>				<p>Annualized Enveloped Load Representative Emissions and Stack Parameters (59 Degrees)</p> <p>Load 75 percent</p> <p>Exit Temp (F) 1194.00 918.71 K Exit Velocity (ft/s) 131.67 40.13 m/s Emissions (lb/h)</p> <p>NOX 29.22 3.68 g/s CO 5.71 0.72 g/s PM/PM10 1.94 0.24 g/s SO2 1.18 0.15 g/s VOC 0.25 0.03 g/s</p>				<p>Total Annual Fuel Enveloped Load Representative Emissions and Stack Parameters (59 Degrees)</p> <p>Load 75 percent</p> <p>Exit Temp (F) 1139.00 888.15 K Exit Velocity (ft/s) 129.71 39.54 m/s Emissions (lb/h)</p> <p>NOX 56.28 7.09 g/s CO 22.40 2.82 g/s PM/PM10 5.79 0.73 g/s SO2 4.86 0.61 g/s VOC 1.19 0.15 g/s</p>			
<p>Load 50 percent</p> <p>Case Name Case 7 Case 8 Case 9 Ambient Temp (F) 95 59 20</p> <p>Evap Cooler NO NO NO Duct Firing NO NO NO</p> <p>Exit Temp (F) 1200 1184 1160 Exit Velocity (ft/s) 106.35 110.53 112.68 Emissions (lb/h)</p> <p>NOX 46.40 50.40 52.80 CO 30.00 33.00 34.00 PM/PM10 9.00 9.00 9.00 SO2 6.40 6.90 7.30 VOC 1.80 1.80 2.00</p>				<p>Short-Term Enveloped Load Representative Emissions and Stack Parameters</p> <p>Load 50 percent</p> <p>Exit Temp (F) 1160.00 899.82 K Exit Velocity (ft/s) 106.35 32.42 m/s Emissions (lb/h)</p> <p>NOX 52.80 6.65 g/s CO 34.00 4.28 g/s PM/PM10 9.00 1.13 g/s SO2 7.30 0.92 g/s VOC 2.00 0.25 g/s</p>				<p>Annualized Enveloped Load Representative Emissions and Stack Parameters (59 Degrees)</p> <p>Load 50 percent</p> <p>Exit Temp (F) 1184.00 913.15 K Exit Velocity (ft/s) 110.53 33.69 m/s Emissions (lb/h)</p> <p>NOX 27.33 3.44 g/s CO 17.89 2.25 g/s PM/PM10 4.88 0.61 g/s SO2 3.74 0.47 g/s VOC 0.98 0.12 g/s</p>				<p>Load 50 percent</p> <p>Case Name Case 16 Case 17 Case 18 Ambient Temp (F) 95 59 20</p> <p>Evap Cooler NO NO NO Duct Firing NO NO NO</p> <p>Exit Temp (F) 1200 1200 1200 Exit Velocity (ft/s) 108.45 112.04 113.42 Emissions (lb/h)</p> <p>NOX 182.00 199.00 209.00 CO 74.00 63.00 57.00 PM/PM10 17.00 17.00 17.00 SO2 7.45 8.15 8.57 VOC 1.80 1.80 2.00</p>				<p>Short-Term Enveloped Load Representative Emissions and Stack Parameters</p> <p>Load 50 percent</p> <p>Exit Temp (F) 1200.00 922.04 K Exit Velocity (ft/s) 108.45 33.06 m/s Emissions (lb/h)</p> <p>NOX 209.00 26.33 g/s CO 74.00 9.32 g/s PM/PM10 17.00 2.14 g/s SO2 8.57 1.08 g/s VOC 2.00 0.25 g/s</p>				<p>Annualized Enveloped Load Representative Emissions and Stack Parameters (59 Degrees)</p> <p>Load 50 percent</p> <p>Exit Temp (F) 1200.00 922.04 K Exit Velocity (ft/s) 112.04 34.15 m/s Emissions (lb/h)</p> <p>NOX 22.72 2.86 g/s CO 7.19 0.91 g/s PM/PM10 1.94 0.24 g/s SO2 0.93 0.12 g/s VOC 0.21 0.03 g/s</p>				<p>Total Annual Fuel Enveloped Load Representative Emissions and Stack Parameters (59 Degrees)</p> <p>Load 50 percent</p> <p>Exit Temp (F) 1184.00 913.15 K Exit Velocity (ft/s) 110.53 33.69 m/s Emissions (lb/h)</p> <p>NOX 44.29 5.58 g/s CO 21.32 2.69 g/s PM/PM10 5.79 0.73 g/s SO2 3.88 0.49 g/s VOC 0.98 0.12 g/s</p>			
<p>SCCT Operating Parameters</p> <p>Total Unit Operation 4750 hr/yr Natural Gas Operation 4750 hr/yr Lower Sulfur (0.0065%) Fuel Oil Operation 1000 hr/yr</p>																											
<p>Notes</p> <p>a Performance data from the May 1999 PSD simple cycle permit application. b Based on information from JEA on 1/12/04 the lower sulfur fuel oil will not have any operational impact to the turbines except lower sulfur emissions. c Annualized worst case emissions are from 100, 75, and 50% loads at annual average temperature of 59 F. d Sulfur content assumed for the Natural Gas = 2.0 grains of sulfur/100 SCF (ratioed from 0.2 to 2.0 grains S/100 scf) e Assumed 100% conversion of Sulfur to SO2 for natural gas. f Sulfur content assumed for the lower sulfur distillate fuel oil = 0.0065% Sulfur (ratioed from 0.05% S to 0.0065% S) g PM/PM10 emissions reflect particulate emissions as denoted in the May 1999 PSD simple cycle permit application. h VOC emissions represent 20% of the UHC emissions. i NOx emissions reflect 12 ppm and not the 10.5 ppm as indicated in the air permit. Modeling will be performed at the original application's NOx emission rate. j The stack parameters for the annual operating scenario for combined fuel (natural gas and fuel oil) reflect those parameters for the annualized natural gas fired case.</p>																											

Determination of Representative Emission and Stack Parameters and Potential to Emit Calculator

Combined Cycle Operation - Natural Gas							Combined Cycle Operation - Fuel Oil							Annual Operation																																																																																																																																																																																																																																																																																																																																																																																																	
Load 100 percent GETFA <table border="1"> <tr> <th>Case Name</th> <th>Case 1</th> <th>Case 2</th> <th>Case 3</th> <th>Case 4</th> <th>Case 5</th> <th>Case 6</th> <th>Case 7</th> </tr> <tr> <td>Ambient Temp (F)</td> <td>95</td> <td>95</td> <td>95</td> <td>95</td> <td>59</td> <td>59</td> <td>20</td> </tr> <tr> <td>Evap Cooler</td> <td>NO</td> <td>NO</td> <td>YES</td> <td>YES</td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> <tr> <td>Duct Firing</td> <td>YES</td> <td>NO</td> <td>NO</td> <td>YES</td> <td>NO</td> <td>YES</td> <td>NO</td> </tr> <tr> <td>Exit Temp (F)</td> <td>205</td> <td>208</td> <td>209</td> <td>207</td> <td>206</td> <td>204</td> <td>206</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>81.4</td> <td>81.5</td> <td>83.3</td> <td>83.1</td> <td>86.2</td> <td>86.1</td> <td>71.1</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>23.34</td> <td>21.12</td> <td>21.82</td> <td>23.78</td> <td>23.32</td> <td>23.82</td> <td>24.95</td> </tr> <tr> <td>CO</td> <td>62.57</td> <td>45.53</td> <td>46.47</td> <td>81.33</td> <td>50.29</td> <td>54.67</td> <td>54.26</td> </tr> <tr> <td>PM/PM10</td> <td>10.30</td> <td>9.50</td> <td>9.50</td> <td>10.20</td> <td>9.50</td> <td>9.70</td> <td>9.50</td> </tr> <tr> <td>SO2</td> <td>11.30</td> <td>10.30</td> <td>10.70</td> <td>11.80</td> <td>11.40</td> <td>11.70</td> <td>12.20</td> </tr> <tr> <td>VOC</td> <td>6.81</td> <td>2.73</td> <td>2.60</td> <td>8.36</td> <td>2.95</td> <td>4.05</td> <td>3.15</td> </tr> </table>							Case Name	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Ambient Temp (F)	95	95	95	95	59	59	20	Evap Cooler	NO	NO	YES	YES	NO	NO	NO	Duct Firing	YES	NO	NO	YES	NO	YES	NO	Exit Temp (F)	205	208	209	207	206	204	206	Exit Velocity (ft/s)	81.4	81.5	83.3	83.1	86.2	86.1	71.1	Emissions (lb/h)								NOX	23.34	21.12	21.82	23.78	23.32	23.82	24.95	CO	62.57	45.53	46.47	81.33	50.29	54.67	54.26	PM/PM10	10.30	9.50	9.50	10.20	9.50	9.70	9.50	SO2	11.30	10.30	10.70	11.80	11.40	11.70	12.20	VOC	6.81	2.73	2.60	8.36	2.95	4.05	3.15	Short-Term Enveloped Load Representative Emissions and Stack Parameters <table border="1"> <tr> <th>Load 100 percent</th> <th>Exit Temp (F)</th> <th>204.00</th> <th>368.71</th> <th>K</th> </tr> <tr> <th>Exit Velocity (ft/s)</th> <td>81.40</td> <td>18.71</td> <td>m/s</td> <td></td> </tr> <tr> <th>Emissions (lb/h)</th> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>24.95</td> <td>3.14</td> <td>g/s</td> <td></td> </tr> <tr> <td>CO</td> <td>62.57</td> <td>7.88</td> <td>g/s</td> <td></td> </tr> <tr> <td>PM/PM10</td> <td>10.30</td> <td>1.30</td> <td>g/s</td> <td></td> </tr> <tr> <td>SO2</td> <td>12.20</td> <td>1.54</td> <td>g/s</td> <td></td> </tr> <tr> <td>VOC</td> <td>6.81</td> <td>0.86</td> <td>g/s</td> <td></td> </tr> </table>							Load 100 percent	Exit Temp (F)	204.00	368.71	K	Exit Velocity (ft/s)	81.40	18.71	m/s		Emissions (lb/h)					NOX	24.95	3.14	g/s		CO	62.57	7.88	g/s		PM/PM10	10.30	1.30	g/s		SO2	12.20	1.54	g/s		VOC	6.81	0.86	g/s		Annualized Enveloped Load Representative Emissions and Stack Parameters (50 Degrees) <table border="1"> <tr> <th>Load 100 percent</th> <th>Exit Temp (F)</th> <th>204.00</th> <th>368.71</th> <th>K</th> </tr> <tr> <th>Exit Velocity (ft/s)</th> <td>86.10</td> <td>20.15</td> <td>m/s</td> <td></td> </tr> <tr> <th>Emissions (lb/h)</th> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>23.82</td> <td>3.01</td> <td>g/s</td> <td></td> </tr> <tr> <td>CO</td> <td>54.87</td> <td>8.91</td> <td>g/s</td> <td></td> </tr> <tr> <td>PM/PM10</td> <td>9.70</td> <td>1.22</td> <td>g/s</td> <td></td> </tr> <tr> <td>SO2</td> <td>11.70</td> <td>1.47</td> <td>g/s</td> <td></td> </tr> <tr> <td>VOC</td> <td>4.05</td> <td>0.51</td> <td>g/s</td> <td></td> </tr> </table>							Load 100 percent	Exit Temp (F)	204.00	368.71	K	Exit Velocity (ft/s)	86.10	20.15	m/s		Emissions (lb/h)					NOX	23.82	3.01	g/s		CO	54.87	8.91	g/s		PM/PM10	9.70	1.22	g/s		SO2	11.70	1.47	g/s		VOC	4.05	0.51	g/s		Load 100 percent GETFA <table border="1"> <tr> <th>Case Name</th> <th>Case 14</th> <th>Case 15</th> <th>Case 16</th> <th>Case 17</th> </tr> <tr> <td>Ambient Temp (F)</td> <td>95</td> <td>59</td> <td>20</td> <td>95</td> </tr> <tr> <td>Evap Cooler</td> <td>NO</td> <td>NO</td> <td>NO</td> <td>YES</td> </tr> <tr> <td>Duct Firing</td> <td>NO</td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> <tr> <td>Exit Temp (F)</td> <td>272</td> <td>265</td> <td>265</td> <td>274</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>69.8</td> <td>75.3</td> <td>79.7</td> <td>71.7</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>101.23</td> <td>112.41</td> <td>119.37</td> <td>104.53</td> </tr> <tr> <td>CO</td> <td>61.43</td> <td>67.86</td> <td>72.43</td> <td>62.59</td> </tr> <tr> <td>PM/PM10</td> <td>17.90</td> <td>17.90</td> <td>17.90</td> <td>17.90</td> </tr> <tr> <td>SO2</td> <td>12.05</td> <td>13.38</td> <td>14.22</td> <td>12.45</td> </tr> <tr> <td>VOC</td> <td>7.05</td> <td>7.88</td> <td>8.14</td> <td>7.24</td> </tr> </table>							Case Name	Case 14	Case 15	Case 16	Case 17	Ambient Temp (F)	95	59	20	95	Evap Cooler	NO	NO	NO	YES	Duct Firing	NO	NO	NO	NO	Exit Temp (F)	272	265	265	274	Exit Velocity (ft/s)	69.8	75.3	79.7	71.7	Emissions (lb/h)					NOX	101.23	112.41	119.37	104.53	CO	61.43	67.86	72.43	62.59	PM/PM10	17.90	17.90	17.90	17.90	SO2	12.05	13.38	14.22	12.45	VOC	7.05	7.88	8.14	7.24	Short-Term Enveloped Load Representative Emissions and Stack Parameters <table border="1"> <tr> <th>Load 100 percent</th> <th>Exit Temp (F)</th> <th>265.00</th> <th>402.59</th> <th>K</th> </tr> <tr> <th>Exit Velocity (ft/s)</th> <td>69.80</td> <td>21.28</td> <td>m/s</td> <td></td> </tr> <tr> <th>Emissions (lb/h)</th> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>119.37</td> <td>15.04</td> <td>g/s</td> <td></td> </tr> <tr> <td>CO</td> <td>72.43</td> <td>9.13</td> <td>g/s</td> <td></td> </tr> <tr> <td>PM/PM10</td> <td>17.90</td> <td>2.26</td> <td>g/s</td> <td></td> </tr> <tr> <td>SO2</td> <td>14.22</td> <td>1.79</td> <td>g/s</td> <td></td> </tr> <tr> <td>VOC</td> <td>8.14</td> <td>1.03</td> <td>g/s</td> <td></td> </tr> </table>							Load 100 percent	Exit Temp (F)	265.00	402.59	K	Exit Velocity (ft/s)	69.80	21.28	m/s		Emissions (lb/h)					NOX	119.37	15.04	g/s		CO	72.43	9.13	g/s		PM/PM10	17.90	2.26	g/s		SO2	14.22	1.79	g/s		VOC	8.14	1.03	g/s		Annualized Enveloped Load Representative Emissions and Stack Parameters (50 Degrees) <table border="1"> <tr> <th>Load 100 percent</th> <th>Exit Temp (F)</th> <th>265.00</th> <th>402.59</th> <th>K</th> </tr> <tr> <th>Exit Velocity (ft/s)</th> <td>75.30</td> <td>22.95</td> <td>m/s</td> <td></td> </tr> <tr> <th>Emissions (lb/h)</th> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>12.83</td> <td>1.62</td> <td>g/s</td> <td></td> </tr> <tr> <td>CO</td> <td>7.75</td> <td>0.98</td> <td>g/s</td> <td></td> </tr> <tr> <td>PM/PM10</td> <td>2.04</td> <td>0.26</td> <td>g/s</td> <td></td> </tr> <tr> <td>SO2</td> <td>1.53</td> <td>0.19</td> <td>g/s</td> <td></td> </tr> <tr> <td>VOC</td> <td>0.88</td> <td>0.11</td> <td>g/s</td> <td></td> </tr> </table>							Load 100 percent	Exit Temp (F)	265.00	402.59	K	Exit Velocity (ft/s)	75.30	22.95	m/s		Emissions (lb/h)					NOX	12.83	1.62	g/s		CO	7.75	0.98	g/s		PM/PM10	2.04	0.26	g/s		SO2	1.53	0.19	g/s		VOC	0.88	0.11	g/s		Total Annual Dual Fuel Enveloped Load Representative Emissions and Stack Parameters (50 Degrees) <table border="1"> <tr> <th>Load 100 percent</th> <th>Exit Temp (F)</th> <th>204.00</th> <th>368.71</th> <th>K</th> </tr> <tr> <th>Exit Velocity (ft/s)</th> <td>86.10</td> <td>20.15</td> <td>m/s</td> <td></td> </tr> <tr> <th>Emissions (lb/h)</th> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>34.02</td> <td>4.29</td> <td>g/s</td> <td></td> </tr> <tr> <td>CO</td> <td>56.35</td> <td>7.10</td> <td>g/s</td> <td></td> </tr> <tr> <td>PM/PM10</td> <td>10.64</td> <td>1.34</td> <td>g/s</td> <td></td> </tr> <tr> <td>SO2</td> <td>11.89</td> <td>1.50</td> <td>g/s</td> <td></td> </tr> <tr> <td>VOC</td> <td>4.48</td> <td>0.58</td> <td>g/s</td> <td></td> </tr> </table>		Load 100 percent	Exit Temp (F)	204.00	368.71	K	Exit Velocity (ft/s)	86.10	20.15	m/s		Emissions (lb/h)					NOX	34.02	4.29	g/s		CO	56.35	7.10	g/s		PM/PM10	10.64	1.34	g/s		SO2	11.89	1.50	g/s		VOC	4.48	0.58	g/s	
Case Name	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7																																																																																																																																																																																																																																																																																																																																																																																																								
Ambient Temp (F)	95	95	95	95	59	59	20																																																																																																																																																																																																																																																																																																																																																																																																								
Evap Cooler	NO	NO	YES	YES	NO	NO	NO																																																																																																																																																																																																																																																																																																																																																																																																								
Duct Firing	YES	NO	NO	YES	NO	YES	NO																																																																																																																																																																																																																																																																																																																																																																																																								
Exit Temp (F)	205	208	209	207	206	204	206																																																																																																																																																																																																																																																																																																																																																																																																								
Exit Velocity (ft/s)	81.4	81.5	83.3	83.1	86.2	86.1	71.1																																																																																																																																																																																																																																																																																																																																																																																																								
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																															
NOX	23.34	21.12	21.82	23.78	23.32	23.82	24.95																																																																																																																																																																																																																																																																																																																																																																																																								
CO	62.57	45.53	46.47	81.33	50.29	54.67	54.26																																																																																																																																																																																																																																																																																																																																																																																																								
PM/PM10	10.30	9.50	9.50	10.20	9.50	9.70	9.50																																																																																																																																																																																																																																																																																																																																																																																																								
SO2	11.30	10.30	10.70	11.80	11.40	11.70	12.20																																																																																																																																																																																																																																																																																																																																																																																																								
VOC	6.81	2.73	2.60	8.36	2.95	4.05	3.15																																																																																																																																																																																																																																																																																																																																																																																																								
Load 100 percent	Exit Temp (F)	204.00	368.71	K																																																																																																																																																																																																																																																																																																																																																																																																											
Exit Velocity (ft/s)	81.40	18.71	m/s																																																																																																																																																																																																																																																																																																																																																																																																												
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																															
NOX	24.95	3.14	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
CO	62.57	7.88	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
PM/PM10	10.30	1.30	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
SO2	12.20	1.54	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
VOC	6.81	0.86	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
Load 100 percent	Exit Temp (F)	204.00	368.71	K																																																																																																																																																																																																																																																																																																																																																																																																											
Exit Velocity (ft/s)	86.10	20.15	m/s																																																																																																																																																																																																																																																																																																																																																																																																												
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																															
NOX	23.82	3.01	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
CO	54.87	8.91	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
PM/PM10	9.70	1.22	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
SO2	11.70	1.47	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
VOC	4.05	0.51	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
Case Name	Case 14	Case 15	Case 16	Case 17																																																																																																																																																																																																																																																																																																																																																																																																											
Ambient Temp (F)	95	59	20	95																																																																																																																																																																																																																																																																																																																																																																																																											
Evap Cooler	NO	NO	NO	YES																																																																																																																																																																																																																																																																																																																																																																																																											
Duct Firing	NO	NO	NO	NO																																																																																																																																																																																																																																																																																																																																																																																																											
Exit Temp (F)	272	265	265	274																																																																																																																																																																																																																																																																																																																																																																																																											
Exit Velocity (ft/s)	69.8	75.3	79.7	71.7																																																																																																																																																																																																																																																																																																																																																																																																											
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																															
NOX	101.23	112.41	119.37	104.53																																																																																																																																																																																																																																																																																																																																																																																																											
CO	61.43	67.86	72.43	62.59																																																																																																																																																																																																																																																																																																																																																																																																											
PM/PM10	17.90	17.90	17.90	17.90																																																																																																																																																																																																																																																																																																																																																																																																											
SO2	12.05	13.38	14.22	12.45																																																																																																																																																																																																																																																																																																																																																																																																											
VOC	7.05	7.88	8.14	7.24																																																																																																																																																																																																																																																																																																																																																																																																											
Load 100 percent	Exit Temp (F)	265.00	402.59	K																																																																																																																																																																																																																																																																																																																																																																																																											
Exit Velocity (ft/s)	69.80	21.28	m/s																																																																																																																																																																																																																																																																																																																																																																																																												
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																															
NOX	119.37	15.04	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
CO	72.43	9.13	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
PM/PM10	17.90	2.26	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
SO2	14.22	1.79	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
VOC	8.14	1.03	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
Load 100 percent	Exit Temp (F)	265.00	402.59	K																																																																																																																																																																																																																																																																																																																																																																																																											
Exit Velocity (ft/s)	75.30	22.95	m/s																																																																																																																																																																																																																																																																																																																																																																																																												
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																															
NOX	12.83	1.62	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
CO	7.75	0.98	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
PM/PM10	2.04	0.26	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
SO2	1.53	0.19	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
VOC	0.88	0.11	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
Load 100 percent	Exit Temp (F)	204.00	368.71	K																																																																																																																																																																																																																																																																																																																																																																																																											
Exit Velocity (ft/s)	86.10	20.15	m/s																																																																																																																																																																																																																																																																																																																																																																																																												
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																															
NOX	34.02	4.29	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
CO	56.35	7.10	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
PM/PM10	10.64	1.34	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
SO2	11.89	1.50	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
VOC	4.48	0.58	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
Load 75 percent <table border="1"> <tr> <th>Case Name</th> <th>Case 8</th> <th>Case 10</th> <th>Case 12</th> </tr> <tr> <td>Ambient Temp (F)</td> <td>95</td> <td>59</td> <td>20</td> </tr> <tr> <td>Evap Cooler</td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> <tr> <td>Duct Firing</td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> <tr> <td>Exit Temp (F)</td> <td>198</td> <td>194</td> <td>194</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>50.1</td> <td>53.1</td> <td>55.4</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>17.34</td> <td>18.89</td> <td>20.01</td> </tr> <tr> <td>CO</td> <td>37.67</td> <td>41.05</td> <td>43.18</td> </tr> <tr> <td>PM/PM10</td> <td>9.50</td> <td>9.50</td> <td>9.50</td> </tr> <tr> <td>SO2</td> <td>8.50</td> <td>9.20</td> <td>9.80</td> </tr> <tr> <td>VOC</td> <td>2.28</td> <td>2.40</td> <td>2.51</td> </tr> </table>							Case Name	Case 8	Case 10	Case 12	Ambient Temp (F)	95	59	20	Evap Cooler	NO	NO	NO	Duct Firing	NO	NO	NO	Exit Temp (F)	198	194	194	Exit Velocity (ft/s)	50.1	53.1	55.4	Emissions (lb/h)				NOX	17.34	18.89	20.01	CO	37.67	41.05	43.18	PM/PM10	9.50	9.50	9.50	SO2	8.50	9.20	9.80	VOC	2.28	2.40	2.51	Short-Term Enveloped Load Representative Emissions and Stack Parameters <table border="1"> <tr> <th>Load 75 percent</th> <th>Exit Temp (F)</th> <th>194.00</th> <th>363.15</th> <th>K</th> </tr> <tr> <th>Exit Velocity (ft/s)</th> <td>50.10</td> <td>15.27</td> <td>m/s</td> <td></td> </tr> <tr> <th>Emissions (lb/h)</th> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>20.01</td> <td>2.52</td> <td>g/s</td> <td></td> </tr> <tr> <td>CO</td> <td>43.18</td> <td>5.44</td> <td>g/s</td> <td></td> </tr> <tr> <td>PM/PM10</td> <td>9.50</td> <td>1.20</td> <td>g/s</td> <td></td> </tr> <tr> <td>SO2</td> <td>9.80</td> <td>1.23</td> <td>g/s</td> <td></td> </tr> <tr> <td>VOC</td> <td>2.51</td> <td>0.32</td> <td>g/s</td> <td></td> </tr> </table>							Load 75 percent	Exit Temp (F)	194.00	363.15	K	Exit Velocity (ft/s)	50.10	15.27	m/s		Emissions (lb/h)					NOX	20.01	2.52	g/s		CO	43.18	5.44	g/s		PM/PM10	9.50	1.20	g/s		SO2	9.80	1.23	g/s		VOC	2.51	0.32	g/s		Annualized Enveloped Load Representative Emissions and Stack Parameters (50 Degrees) <table border="1"> <tr> <th>Load 75 percent</th> <th>Exit Temp (F)</th> <th>194.00</th> <th>363.15</th> <th>K</th> </tr> <tr> <th>Exit Velocity (ft/s)</th> <td>53.10</td> <td>18.18</td> <td>m/s</td> <td></td> </tr> <tr> <th>Emissions (lb/h)</th> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>18.89</td> <td>2.38</td> <td>g/s</td> <td></td> </tr> <tr> <td>CO</td> <td>41.05</td> <td>5.17</td> <td>g/s</td> <td></td> </tr> <tr> <td>PM/PM10</td> <td>9.50</td> <td>1.20</td> <td>g/s</td> <td></td> </tr> <tr> <td>SO2</td> <td>9.20</td> <td>1.18</td> <td>g/s</td> <td></td> </tr> <tr> <td>VOC</td> <td>2.40</td> <td>0.30</td> <td>g/s</td> <td></td> </tr> </table>							Load 75 percent	Exit Temp (F)	194.00	363.15	K	Exit Velocity (ft/s)	53.10	18.18	m/s		Emissions (lb/h)					NOX	18.89	2.38	g/s		CO	41.05	5.17	g/s		PM/PM10	9.50	1.20	g/s		SO2	9.20	1.18	g/s		VOC	2.40	0.30	g/s		Load 75 percent GETFA <table border="1"> <tr> <th>Case Name</th> <th>Case 16</th> <th>Case 19</th> <th>Case 20</th> </tr> <tr> <td>Ambient Temp (F)</td> <td>95</td> <td>59</td> <td>20</td> </tr> <tr> <td>Evap Cooler</td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> <tr> <td>Duct Firing</td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> <tr> <td>Exit Temp (F)</td> <td>259</td> <td>255</td> <td>255</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>54.8</td> <td>58.9</td> <td>58.9</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>82.81</td> <td>91.21</td> <td>98.85</td> </tr> <tr> <td>CO</td> <td>49.21</td> <td>51.94</td> <td>53.79</td> </tr> <tr> <td>PM/PM10</td> <td>17.90</td> <td>17.90</td> <td>17.90</td> </tr> <tr> <td>SO2</td> <td>9.86</td> <td>10.86</td> <td>11.51</td> </tr> <tr> <td>VOC</td> <td>5.64</td> <td>5.89</td> <td>6.09</td> </tr> </table>							Case Name	Case 16	Case 19	Case 20	Ambient Temp (F)	95	59	20	Evap Cooler	NO	NO	NO	Duct Firing	NO	NO	NO	Exit Temp (F)	259	255	255	Exit Velocity (ft/s)	54.8	58.9	58.9	Emissions (lb/h)				NOX	82.81	91.21	98.85	CO	49.21	51.94	53.79	PM/PM10	17.90	17.90	17.90	SO2	9.86	10.86	11.51	VOC	5.64	5.89	6.09	Short-Term Enveloped Load Representative Emissions and Stack Parameters <table border="1"> <tr> <th>Load 75 percent</th> <th>Exit Temp (F)</th> <th>255.00</th> <th>397.04</th> <th>K</th> </tr> <tr> <th>Exit Velocity (ft/s)</th> <td>54.80</td> <td>16.70</td> <td>m/s</td> <td></td> </tr> <tr> <th>Emissions (lb/h)</th> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>98.85</td> <td>12.18</td> <td>g/s</td> <td></td> </tr> <tr> <td>CO</td> <td>53.79</td> <td>6.76</td> <td>g/s</td> <td></td> </tr> <tr> <td>PM/PM10</td> <td>17.90</td> <td>2.26</td> <td>g/s</td> <td></td> </tr> <tr> <td>SO2</td> <td>11.51</td> <td>1.45</td> <td>g/s</td> <td></td> </tr> <tr> <td>VOC</td> <td>6.09</td> <td>0.77</td> <td>g/s</td> <td></td> </tr> </table>							Load 75 percent	Exit Temp (F)	255.00	397.04	K	Exit Velocity (ft/s)	54.80	16.70	m/s		Emissions (lb/h)					NOX	98.85	12.18	g/s		CO	53.79	6.76	g/s		PM/PM10	17.90	2.26	g/s		SO2	11.51	1.45	g/s		VOC	6.09	0.77	g/s		Annualized Enveloped Load Representative Emissions and Stack Parameters (50 Degrees) <table border="1"> <tr> <th>Load 75 percent</th> <th>Exit Temp (F)</th> <th>255.00</th> <th>397.04</th> <th>K</th> </tr> <tr> <th>Exit Velocity (ft/s)</th> <td>58.90</td> <td>17.34</td> <td>m/s</td> <td></td> </tr> <tr> <th>Emissions (lb/h)</th> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>10.41</td> <td>1.31</td> <td>g/s</td> <td></td> </tr> <tr> <td>CO</td> <td>5.93</td> <td>0.75</td> <td>g/s</td> <td></td> </tr> <tr> <td>PM/PM10</td> <td>2.04</td> <td>0.26</td> <td>g/s</td> <td></td> </tr> <tr> <td>SO2</td> <td>1.24</td> <td>0.18</td> <td>g/s</td> <td></td> </tr> <tr> <td>VOC</td> <td>0.87</td> <td>0.08</td> <td>g/s</td> <td></td> </tr> </table>							Load 75 percent	Exit Temp (F)	255.00	397.04	K	Exit Velocity (ft/s)	58.90	17.34	m/s		Emissions (lb/h)					NOX	10.41	1.31	g/s		CO	5.93	0.75	g/s		PM/PM10	2.04	0.26	g/s		SO2	1.24	0.18	g/s		VOC	0.87	0.08	g/s		Load 75 percent <table border="1"> <tr> <th>Exit Temp (F)</th> <th>194.00</th> <th>363.15</th> <th>K</th> </tr> <tr> <th>Exit Velocity (ft/s)</th> <td>53.10</td> <td>18.18</td> <td>m/s</td> </tr> <tr> <th>Emissions (lb/h)</th> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>27.15</td> <td>3.42</td> <td>g/s</td> </tr> <tr> <td>CO</td> <td>42.26</td> <td>5.33</td> <td>g/s</td> </tr> <tr> <td>PM/PM10</td> <td>10.48</td> <td>1.32</td> <td>g/s</td> </tr> <tr> <td>SO2</td> <td>9.39</td> <td>1.18</td> <td>g/s</td> </tr> <tr> <td>VOC</td> <td>2.80</td> <td>0.35</td> <td>g/s</td> </tr> </table>		Exit Temp (F)	194.00	363.15	K	Exit Velocity (ft/s)	53.10	18.18	m/s	Emissions (lb/h)				NOX	27.15	3.42	g/s	CO	42.26	5.33	g/s	PM/PM10	10.48	1.32	g/s	SO2	9.39	1.18	g/s	VOC	2.80	0.35	g/s																																																																				
Case Name	Case 8	Case 10	Case 12																																																																																																																																																																																																																																																																																																																																																																																																												
Ambient Temp (F)	95	59	20																																																																																																																																																																																																																																																																																																																																																																																																												
Evap Cooler	NO	NO	NO																																																																																																																																																																																																																																																																																																																																																																																																												
Duct Firing	NO	NO	NO																																																																																																																																																																																																																																																																																																																																																																																																												
Exit Temp (F)	198	194	194																																																																																																																																																																																																																																																																																																																																																																																																												
Exit Velocity (ft/s)	50.1	53.1	55.4																																																																																																																																																																																																																																																																																																																																																																																																												
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																															
NOX	17.34	18.89	20.01																																																																																																																																																																																																																																																																																																																																																																																																												
CO	37.67	41.05	43.18																																																																																																																																																																																																																																																																																																																																																																																																												
PM/PM10	9.50	9.50	9.50																																																																																																																																																																																																																																																																																																																																																																																																												
SO2	8.50	9.20	9.80																																																																																																																																																																																																																																																																																																																																																																																																												
VOC	2.28	2.40	2.51																																																																																																																																																																																																																																																																																																																																																																																																												
Load 75 percent	Exit Temp (F)	194.00	363.15	K																																																																																																																																																																																																																																																																																																																																																																																																											
Exit Velocity (ft/s)	50.10	15.27	m/s																																																																																																																																																																																																																																																																																																																																																																																																												
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																															
NOX	20.01	2.52	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
CO	43.18	5.44	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
PM/PM10	9.50	1.20	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
SO2	9.80	1.23	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
VOC	2.51	0.32	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
Load 75 percent	Exit Temp (F)	194.00	363.15	K																																																																																																																																																																																																																																																																																																																																																																																																											
Exit Velocity (ft/s)	53.10	18.18	m/s																																																																																																																																																																																																																																																																																																																																																																																																												
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																															
NOX	18.89	2.38	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
CO	41.05	5.17	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
PM/PM10	9.50	1.20	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
SO2	9.20	1.18	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
VOC	2.40	0.30	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
Case Name	Case 16	Case 19	Case 20																																																																																																																																																																																																																																																																																																																																																																																																												
Ambient Temp (F)	95	59	20																																																																																																																																																																																																																																																																																																																																																																																																												
Evap Cooler	NO	NO	NO																																																																																																																																																																																																																																																																																																																																																																																																												
Duct Firing	NO	NO	NO																																																																																																																																																																																																																																																																																																																																																																																																												
Exit Temp (F)	259	255	255																																																																																																																																																																																																																																																																																																																																																																																																												
Exit Velocity (ft/s)	54.8	58.9	58.9																																																																																																																																																																																																																																																																																																																																																																																																												
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																															
NOX	82.81	91.21	98.85																																																																																																																																																																																																																																																																																																																																																																																																												
CO	49.21	51.94	53.79																																																																																																																																																																																																																																																																																																																																																																																																												
PM/PM10	17.90	17.90	17.90																																																																																																																																																																																																																																																																																																																																																																																																												
SO2	9.86	10.86	11.51																																																																																																																																																																																																																																																																																																																																																																																																												
VOC	5.64	5.89	6.09																																																																																																																																																																																																																																																																																																																																																																																																												
Load 75 percent	Exit Temp (F)	255.00	397.04	K																																																																																																																																																																																																																																																																																																																																																																																																											
Exit Velocity (ft/s)	54.80	16.70	m/s																																																																																																																																																																																																																																																																																																																																																																																																												
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																															
NOX	98.85	12.18	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
CO	53.79	6.76	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
PM/PM10	17.90	2.26	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
SO2	11.51	1.45	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
VOC	6.09	0.77	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
Load 75 percent	Exit Temp (F)	255.00	397.04	K																																																																																																																																																																																																																																																																																																																																																																																																											
Exit Velocity (ft/s)	58.90	17.34	m/s																																																																																																																																																																																																																																																																																																																																																																																																												
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																															
NOX	10.41	1.31	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
CO	5.93	0.75	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
PM/PM10	2.04	0.26	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
SO2	1.24	0.18	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
VOC	0.87	0.08	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
Exit Temp (F)	194.00	363.15	K																																																																																																																																																																																																																																																																																																																																																																																																												
Exit Velocity (ft/s)	53.10	18.18	m/s																																																																																																																																																																																																																																																																																																																																																																																																												
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																															
NOX	27.15	3.42	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
CO	42.26	5.33	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
PM/PM10	10.48	1.32	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
SO2	9.39	1.18	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
VOC	2.80	0.35	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
Load 50 percent <table border="1"> <tr> <th>Case Name</th> <th>Case 9</th> <th>Case 11</th> <th>Case 13</th> </tr> <tr> <td>Ambient Temp (F)</td> <td>95</td> <td>59</td> <td>20</td> </tr> <tr> <td>Evap Cooler</td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> <tr> <td>Duct Firing</td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> <tr> <td>Exit Temp (F)</td> <td>190</td> <td>185</td> <td>185</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>41.6</td> <td>43.4</td> <td>44.9</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>13.99</td> <td>15.18</td> <td>15.98</td> </tr> <tr> <td>CO</td> <td>31.79</td> <td>34.12</td> <td>35.53</td> </tr> <tr> <td>PM/PM10</td> <td>9.50</td> <td>9.50</td> <td>9.50</td> </tr> <tr> <td>SO2</td> <td>8.60</td> <td>7.40</td> <td>7.80</td> </tr> <tr> <td>VOC</td> <td>1.90</td> <td>1.99</td> <td>2.08</td> </tr> </table>							Case Name	Case 9	Case 11	Case 13	Ambient Temp (F)	95	59	20	Evap Cooler	NO	NO	NO	Duct Firing	NO	NO	NO	Exit Temp (F)	190	185	185	Exit Velocity (ft/s)	41.6	43.4	44.9	Emissions (lb/h)				NOX	13.99	15.18	15.98	CO	31.79	34.12	35.53	PM/PM10	9.50	9.50	9.50	SO2	8.60	7.40	7.80	VOC	1.90	1.99	2.08	Short-Term Enveloped Load Representative Emissions and Stack Parameters <table border="1"> <tr> <th>Load 50 percent</th> <th>Exit Temp (F)</th> <th>185.00</th> <th>358.15</th> <th>K</th> </tr> <tr> <th>Exit Velocity (ft/s)</th> <td>41.60</td> <td>12.68</td> <td>m/s</td> <td></td> </tr> <tr> <th>Emissions (lb/h)</th> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>15.98</td> <td>2.01</td> <td>g/s</td> <td></td> </tr> <tr> <td>CO</td> <td>35.53</td> <td>4.48</td> <td>g/s</td> <td></td> </tr> <tr> <td>PM/PM10</td> <td>9.50</td> <td>1.20</td> <td>g/s</td> <td></td> </tr> <tr> <td>SO2</td> <td>7.80</td> <td>0.88</td> <td>g/s</td> <td></td> </tr> <tr> <td>VOC</td> <td>2.08</td> <td>0.28</td> <td>g/s</td> <td></td> </tr> </table>							Load 50 percent	Exit Temp (F)	185.00	358.15	K	Exit Velocity (ft/s)	41.60	12.68	m/s		Emissions (lb/h)					NOX	15.98	2.01	g/s		CO	35.53	4.48	g/s		PM/PM10	9.50	1.20	g/s		SO2	7.80	0.88	g/s		VOC	2.08	0.28	g/s		Annualized Enveloped Load Representative Emissions and Stack Parameters (50 Degrees) <table border="1"> <tr> <th>Load 50 percent</th> <th>Exit Temp (F)</th> <th>185.00</th> <th>358.15</th> <th>K</th> </tr> <tr> <th>Exit Velocity (ft/s)</th> <td>43.40</td> <td>13.23</td> <td>m/s</td> <td></td> </tr> <tr> <th>Emissions (lb/h)</th> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>15.18</td> <td>1.91</td> <td>g/s</td> <td></td> </tr> <tr> <td>CO</td> <td>34.12</td> <td>4.30</td> <td>g/s</td> <td></td> </tr> <tr> <td>PM/PM10</td> <td>9.50</td> <td>1.20</td> <td>g/s</td> <td></td> </tr> <tr> <td>SO2</td> <td>7.40</td> <td>0.83</td> <td>g/s</td> <td></td> </tr> <tr> <td>VOC</td> <td>1.99</td> <td>0.25</td> <td>g/s</td> <td></td> </tr> </table>							Load 50 percent	Exit Temp (F)	185.00	358.15	K	Exit Velocity (ft/s)	43.40	13.23	m/s		Emissions (lb/h)					NOX	15.18	1.91	g/s		CO	34.12	4.30	g/s		PM/PM10	9.50	1.20	g/s		SO2	7.40	0.83	g/s		VOC	1.99	0.25	g/s		Load 50 percent GETFA <table border="1"> <tr> <th>Case Name</th> <th>Case 21</th> <th>Case 22</th> <th>Case 23</th> </tr> <tr> <td>Ambient Temp (F)</td> <td>95</td> <td>59</td> <td>20</td> </tr> <tr> <td>Evap Cooler</td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> <tr> <td>Duct Firing</td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> <tr> <td>Exit Temp (F)</td> <td>252</td> <td>250</td> <td>250</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>48.5</td> <td>47.9</td> <td>48.9</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>85.82</td> <td>71.78</td> <td>75.48</td> </tr> <tr> <td>CO</td> <td>77.09</td> <td>67.08</td> <td>58.98</td> </tr> <tr> <td>PM/PM10</td> <td>17.90</td> <td>17.90</td> <td>17.90</td> </tr> <tr> <td>SO2</td> <td>7.81</td> <td>8.55</td> <td>8.99</td> </tr> <tr> <td>VOC</td> <td>4.64</td> <td>4.90</td> <td>5.08</td> </tr> </table>							Case Name	Case 21	Case 22	Case 23	Ambient Temp (F)	95	59	20	Evap Cooler	NO	NO	NO	Duct Firing	NO	NO	NO	Exit Temp (F)	252	250	250	Exit Velocity (ft/s)	48.5	47.9	48.9	Emissions (lb/h)				NOX	85.82	71.78	75.48	CO	77.09	67.08	58.98	PM/PM10	17.90	17.90	17.90	SO2	7.81	8.55	8.99	VOC	4.64	4.90	5.08	Short-Term Enveloped Load Representative Emissions and Stack Parameters <table border="1"> <tr> <th>Load 50 percent</th> <th>Exit Temp (F)</th> <th>250.00</th> <th>394.26</th> <th>K</th> </tr> <tr> <th>Exit Velocity (ft/s)</th> <td>48.50</td> <td>14.17</td> <td>m/s</td> <td></td> </tr> <tr> <th>Emissions (lb/h)</th> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>75.48</td> <td>9.51</td> <td>g/s</td> <td></td> </tr> <tr> <td>CO</td> <td>77.09</td> <td>9.71</td> <td>g/s</td> <td></td> </tr> <tr> <td>PM/PM10</td> <td>17.90</td> <td>2.26</td> <td>g/s</td> <td></td> </tr> <tr> <td>SO2</td> <td>8.99</td> <td>1.13</td> <td>g/s</td> <td></td> </tr> <tr> <td>VOC</td> <td>5.08</td> <td>0.64</td> <td>g/s</td> <td></td> </tr> </table>							Load 50 percent	Exit Temp (F)	250.00	394.26	K	Exit Velocity (ft/s)	48.50	14.17	m/s		Emissions (lb/h)					NOX	75.48	9.51	g/s		CO	77.09	9.71	g/s		PM/PM10	17.90	2.26	g/s		SO2	8.99	1.13	g/s		VOC	5.08	0.64	g/s		Annualized Enveloped Load Representative Emissions and Stack Parameters (50 Degrees) <table border="1"> <tr> <th>Load 50 percent</th> <th>Exit Temp (F)</th> <th>250.00</th> <th>394.26</th> <th>K</th> </tr> <tr> <th>Exit Velocity (ft/s)</th> <td>47.90</td> <td>14.80</td> <td>m/s</td> <td></td> </tr> <tr> <th>Emissions (lb/h)</th> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>8.19</td> <td>1.03</td> <td>g/s</td> <td></td> </tr> <tr> <td>CO</td> <td>7.68</td> <td>0.98</td> <td>g/s</td> <td></td> </tr> <tr> <td>PM/PM10</td> <td>2.04</td> <td>0.26</td> <td>g/s</td> <td></td> </tr> <tr> <td>SO2</td> <td>0.98</td> <td>0.12</td> <td>g/s</td> <td></td> </tr> <tr> <td>VOC</td> <td>0.57</td> <td>0.07</td> <td>g/s</td> <td></td> </tr> </table>							Load 50 percent	Exit Temp (F)	250.00	394.26	K	Exit Velocity (ft/s)	47.90	14.80	m/s		Emissions (lb/h)					NOX	8.19	1.03	g/s		CO	7.68	0.98	g/s		PM/PM10	2.04	0.26	g/s		SO2	0.98	0.12	g/s		VOC	0.57	0.07	g/s		Load 50 percent <table border="1"> <tr> <th>Exit Temp (F)</th> <th>185.00</th> <th>358.15</th> <th>K</th> </tr> <tr> <th>Exit Velocity (ft/s)</th> <td>43.40</td> <td>13.23</td> <td>m/s</td> </tr> <tr> <th>Emissions (lb/h)</th> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>21.64</td> <td>2.73</td> <td>g/s</td> </tr> <tr> <td>CO</td> <td>37.88</td> <td>4.77</td> <td>g/s</td> </tr> <tr> <td>PM/PM10</td> <td>10.48</td> <td>1.32</td> <td>g/s</td> </tr> <tr> <td>SO2</td> <td>7.53</td> <td>0.95</td> <td>g/s</td> </tr> <tr> <td>VOC</td> <td>2.33</td> <td>0.29</td> <td>g/s</td> </tr> </table>		Exit Temp (F)	185.00	358.15	K	Exit Velocity (ft/s)	43.40	13.23	m/s	Emissions (lb/h)				NOX	21.64	2.73	g/s	CO	37.88	4.77	g/s	PM/PM10	10.48	1.32	g/s	SO2	7.53	0.95	g/s	VOC	2.33	0.29	g/s																																																																				
Case Name	Case 9	Case 11	Case 13																																																																																																																																																																																																																																																																																																																																																																																																												
Ambient Temp (F)	95	59	20																																																																																																																																																																																																																																																																																																																																																																																																												
Evap Cooler	NO	NO	NO																																																																																																																																																																																																																																																																																																																																																																																																												
Duct Firing	NO	NO	NO																																																																																																																																																																																																																																																																																																																																																																																																												
Exit Temp (F)	190	185	185																																																																																																																																																																																																																																																																																																																																																																																																												
Exit Velocity (ft/s)	41.6	43.4	44.9																																																																																																																																																																																																																																																																																																																																																																																																												
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																															
NOX	13.99	15.18	15.98																																																																																																																																																																																																																																																																																																																																																																																																												
CO	31.79	34.12	35.53																																																																																																																																																																																																																																																																																																																																																																																																												
PM/PM10	9.50	9.50	9.50																																																																																																																																																																																																																																																																																																																																																																																																												
SO2	8.60	7.40	7.80																																																																																																																																																																																																																																																																																																																																																																																																												
VOC	1.90	1.99	2.08																																																																																																																																																																																																																																																																																																																																																																																																												
Load 50 percent	Exit Temp (F)	185.00	358.15	K																																																																																																																																																																																																																																																																																																																																																																																																											
Exit Velocity (ft/s)	41.60	12.68	m/s																																																																																																																																																																																																																																																																																																																																																																																																												
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																															
NOX	15.98	2.01	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
CO	35.53	4.48	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
PM/PM10	9.50	1.20	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
SO2	7.80	0.88	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
VOC	2.08	0.28	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
Load 50 percent	Exit Temp (F)	185.00	358.15	K																																																																																																																																																																																																																																																																																																																																																																																																											
Exit Velocity (ft/s)	43.40	13.23	m/s																																																																																																																																																																																																																																																																																																																																																																																																												
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																															
NOX	15.18	1.91	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
CO	34.12	4.30	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
PM/PM10	9.50	1.20	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
SO2	7.40	0.83	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
VOC	1.99	0.25	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
Case Name	Case 21	Case 22	Case 23																																																																																																																																																																																																																																																																																																																																																																																																												
Ambient Temp (F)	95	59	20																																																																																																																																																																																																																																																																																																																																																																																																												
Evap Cooler	NO	NO	NO																																																																																																																																																																																																																																																																																																																																																																																																												
Duct Firing	NO	NO	NO																																																																																																																																																																																																																																																																																																																																																																																																												
Exit Temp (F)	252	250	250																																																																																																																																																																																																																																																																																																																																																																																																												
Exit Velocity (ft/s)	48.5	47.9	48.9																																																																																																																																																																																																																																																																																																																																																																																																												
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																															
NOX	85.82	71.78	75.48																																																																																																																																																																																																																																																																																																																																																																																																												
CO	77.09	67.08	58.98																																																																																																																																																																																																																																																																																																																																																																																																												
PM/PM10	17.90	17.90	17.90																																																																																																																																																																																																																																																																																																																																																																																																												
SO2	7.81	8.55	8.99																																																																																																																																																																																																																																																																																																																																																																																																												
VOC	4.64	4.90	5.08																																																																																																																																																																																																																																																																																																																																																																																																												
Load 50 percent	Exit Temp (F)	250.00	394.26	K																																																																																																																																																																																																																																																																																																																																																																																																											
Exit Velocity (ft/s)	48.50	14.17	m/s																																																																																																																																																																																																																																																																																																																																																																																																												
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																															
NOX	75.48	9.51	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
CO	77.09	9.71	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
PM/PM10	17.90	2.26	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
SO2	8.99	1.13	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
VOC	5.08	0.64	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
Load 50 percent	Exit Temp (F)	250.00	394.26	K																																																																																																																																																																																																																																																																																																																																																																																																											
Exit Velocity (ft/s)	47.90	14.80	m/s																																																																																																																																																																																																																																																																																																																																																																																																												
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																															
NOX	8.19	1.03	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
CO	7.68	0.98	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
PM/PM10	2.04	0.26	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
SO2	0.98	0.12	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
VOC	0.57	0.07	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
Exit Temp (F)	185.00	358.15	K																																																																																																																																																																																																																																																																																																																																																																																																												
Exit Velocity (ft/s)	43.40	13.23	m/s																																																																																																																																																																																																																																																																																																																																																																																																												
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																															
NOX	21.64	2.73	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
CO	37.88	4.77	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
PM/PM10	10.48	1.32	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
SO2	7.53	0.95	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
VOC	2.33	0.29	g/s																																																																																																																																																																																																																																																																																																																																																																																																												
CCCT Operating Parameters Natural Gas Operation 8760 h/yr Lower Sulfur (0.0065%) Fuel Oil Operation 1000 h/yr																																																																																																																																																																																																																																																																																																																																																																																																															
Notes a Performance data from the December 2000 PSD combined cycle permit application & the modified pollutant emissions from the March 2003 duct burner modification submittal. b Based on information from JEA on 1/12/04 the lower sulfur fuel oil will not have any operational impact to the turbines except lower sulfur emissions. c Annualized worst case emissions are from 100, 75, and 50% loads at annual average temperature of 59 F. d Sulfur content assumed for the Natural Gas = 2.0 grains of sulfur/100 SCF (retrofit from 0.2 to 2.0 grains S/100 scf) e Assumed 100% conversion of Sulfur to SO2 for natural gas. f Sulfur content assumed for the lower sulfur distillate fuel oil = 0.0065% Sulfur (retrofit from 0.05% S to 0.0065% S) g PM/PM10 emissions (as particulate) reflect front heat catch excluding the effect of SO2 oxidation & SCR catalyst. h The stack parameters for the annual operating scenario for combined fuel (natural gas and fuel oil) reflect those parameters for the annualized natural gas fired case.																																																																																																																																																																																																																																																																																																																																																																																																															

Appendix B
VISCREEN Output

Visual Effects Screening Analysis for
 Source: JEA BB
 Class I Area: Oke

*** User-selected Screening Scenario Results ***

Input Emissions for

Particulates	53.00	LB /HR
NOx (as NO2)	577.00	LB /HR
Primary NO2	.00	LB /HR
Soot	.00	LB /HR
Primary SO4	.00	LB /HR

PARTICLE CHARACTERISTICS

	Density	Diameter
	=====	=====
Primary Part.	2.5	6
Soot	2.0	1
Sulfate	1.5	4

Transport Scenario Specifications:

Background Ozone:	.04 ppm
Background Visual Range:	65.00 km
Source-Observer Distance:	34.00 km
Min. Source-Class I Distance:	34.00 km
Max. Source-Class I Distance:	80.00 km
Plume-Source-Observer Angle:	11.25 degrees
Stability:	4
wind speed:	3.53 m/s

R E S U L T S

Asterisks (*) indicate plume impacts that exceed screening criteria

Maximum Visual Impacts INSIDE Class I Area
 Screening Criteria ARE NOT Exceeded

Backgrnd	Theta	Azi	Distance	Alpha	Delta E		Contrast	
					Crit	Plume	Crit	Plume
=====	=====	=====	=====	=====	=====	=====	=====	=====
SKY	10.	140.	45.4	29.	2.08	.764	.05	-.001
SKY	140.	140.	45.4	29.	2.00	.316	.05	-.005
TERRAIN	10.	84.	34.0	84.	2.87	.288	.06	.003
TERRAIN	140.	84.	34.0	84.	2.00	.101	.06	.001

Maximum Visual Impacts OUTSIDE Class I Area
 Screening Criteria ARE NOT Exceeded

Backgrnd	Theta	Azi	Distance	Alpha	Delta E		Contrast	
					Crit	Plume	Crit	Plume
=====	=====	=====	=====	=====	=====	=====	=====	=====
SKY	10.	0.	1.0	168.	2.00	1.477	.05	.012
SKY	140.	0.	1.0	168.	2.00	.308	.05	-.014
TERRAIN	10.	0.	1.0	168.	2.00	1.716	.05	.022
TERRAIN	140.	0.	1.0	168.	2.00	.469	.05	.019

Attachment 2

**CALPUFF Class I
Air Dispersion Modeling Report**

**CALPUFF CLASS I
AIR DISPERSION MODELING REPORT
FOR THE
BRANDY BRANCH FACILITY**

**PREPARED BY
BLACK & VEATCH**

MARCH 2004

TABLE OF CONTENTS

1.0	Introduction	1-1
2.0	Model Selection and Inputs	2-1
2.1	Model Selection	2-1
2.2	CALPUFF Model Settings	2-1
2.3	Building Wake Effects	2-1
2.4	Receptor Locations	2-1
2.5	Meteorological Data Processing	2-3
	2.5.1 CALMET Settings	2-3
	2.5.2 Modeling Domain	2-3
	2.5.3 Mesoscale Model Data	2-3
	2.5.4 Geophysical Data Processing	2-6
2.6	Project Emissions	2-6
3.0	CALPUFF Analyses	3-1
3.1	Regional Haze Analysis	3-1
	3.1.1 Visibility	3-1
	3.1.2 Background Visual Ranges and Relative Humidity Factors	3-2
	3.1.3 Interagency Workgroup On Air Quality Modeling (IWAQM) Guidelines	3-2
3.2	Deposition Analyses	3-6
3.3	Class I Impact Analysis	3-6

LIST OF TABLES

Table 2-1	CALPUFF Model Settings	2-2
Table 2-2	Stack Parameters and Pollutant Emissions Used in CALPUFF Modeling Analysis For Pollutants with Averaging Periods Less Than 24 Hours	2-7
Table 2-3	Representative (Enveloped) Stack Parameters and Pollutant Emissions Used in the CALPUFF Modeling Analysis For Pollutants with Averaging Periods of 24 Hours	2-8
Table 2-4	Representative (Enveloped) Stack Parameters and Pollutant Emissions Used in the CALPUFF Modeling Analysis For Pollutants with Annual Averaging Periods	2-9
Table 3-1	Outline of IWAQM Refined Modeling Analyses Recommendations	3-3
Table 3-2	Regional Haze Results	3-5
Table 3-3	Deposition Results	3-7
Table 3-4	1990 Significant Impact Level Modeling Results	3-8
Table 3-5	1992 Significant Impact Level Modeling Results	3-9

Table 3-6 1996 Significant Impact Level Modeling Results.....3-10

LIST OF FIGURES

Figure 1-1 Proposed Project Location.....1-2
Figure 2-1 Okefenokee CALPUFF Receptors.....2-4
Figure 2-2 Modeling Domain2-5

1.0 Introduction

This Air Quality Impact Analysis (AQIA) is intended to support JEA's proposed fuel oil switch and increase in oil firing hours of operation for the simple cycle combustion turbine (SCCT) and the two combined cycle combustion turbines (CCCTs) at the Brandy Branch Generating Station facility (hereinafter referred to as the Proposed Project). Specifically, JEA proposes to permit an alternate operating scenario allowing for the use of natural gas with a higher sulfur content of 2.0 grains per 100 standard cubic feet (hereinafter referred to as 2.0 natural gas) and a cleaner, lower sulfur fuel oil (0.0065% sulfur) (hereinafter referred to as LSFO). This will allow greater operational flexibility for the Generating Station while meeting compliance requirements. The air dispersion modeling analysis was conducted in accordance with mutually agreed upon air dispersion modeling performed in support of Brandy Branch permits PSD-FL-267 and PSD-FL-310, as well as an air dispersion modeling protocol submitted to FDEP on behalf of JEA in a memorandum from Black & Veatch dated January 12, 2004.

As part of the air impact evaluation for the proposed revision to the Brandy Branch Generating Station, analyses of The Proposed Project's effect on the Okefenokee National Wildlife Refuge (ONWR) were performed. The ONWR is a Prevention of Significant Deterioration (PSD) Class I area located in south-east Georgia approximately 34 km north-northwest of the Generating Station. The analyses presented in this document were performed on that portion of the ONWR that lies greater than 50 km from the Generating Station. Analyses covering the portion of the ONWR that lies between 34 and 50 km from the Generating Station site are covered under a separate document and are included in Attachment 1. Federal Class I areas are afforded special environmental protection through the use of Air Quality Related Values (AQRVs). The AQRVs of interest in this protocol are regional haze, deposition, and Class I Significant Impact Levels (SILs). Figure 1-1 presents the location of the Generating Station with respect to the ONWR.

The methodology of the refined CALPUFF analysis closely followed those procedures recommended in the Interagency Workgroup on Air Quality Modeling (IWAQM) Phase II report dated December 1998, the Phase I Federal Land Managers' Air Quality Related Values Workgroup (FLAG) report dated December 2000 where appropriate for model option selections. This protocol includes a discussion of the meteorological and geophysical databases to be used in the analysis, the preparation of those databases for introduction into the modeling system, the air modeling approach to assess impacts at ONWR, and the air quality impact results.

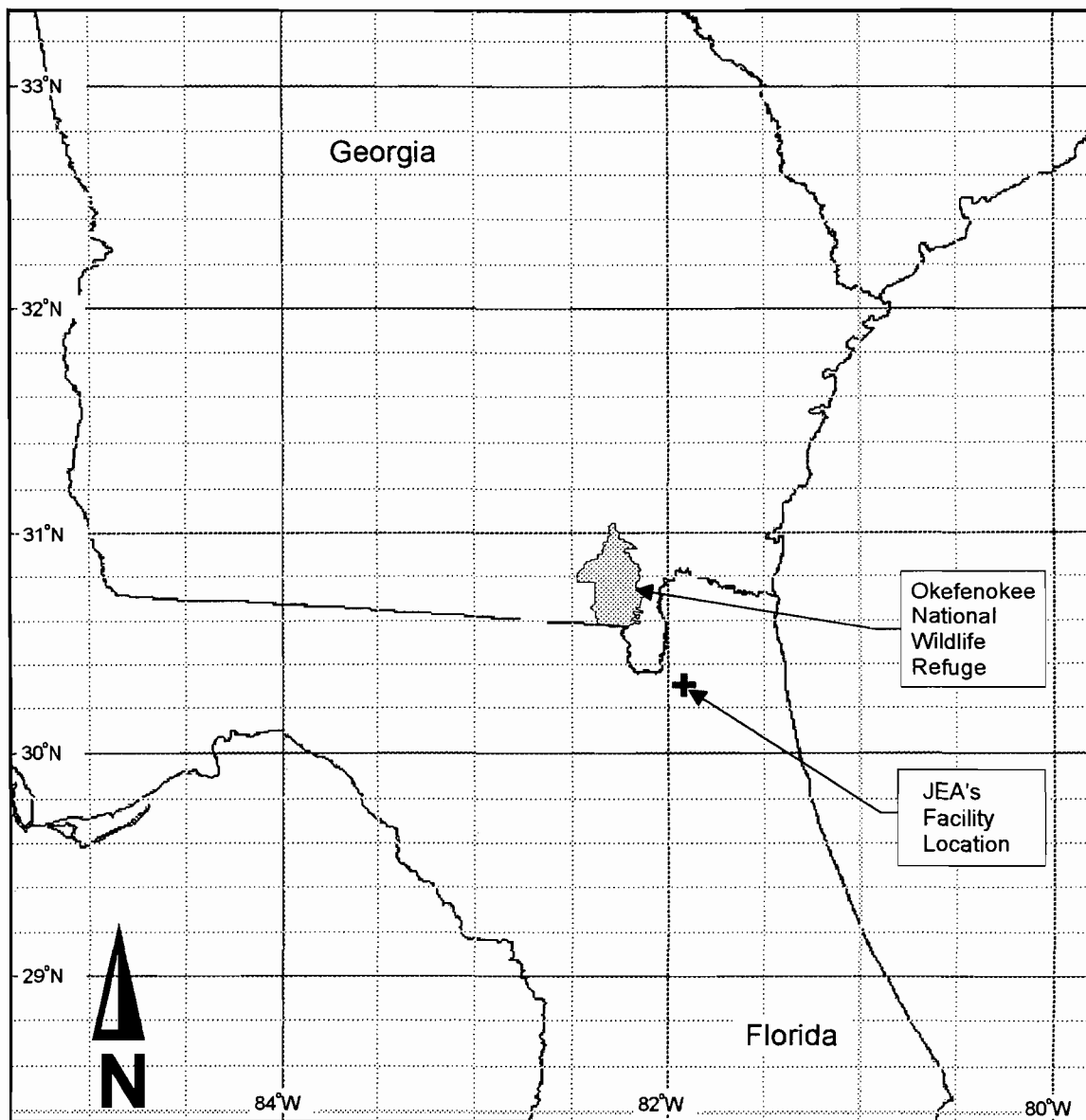


Figure 1-1
Generating Station Location With Respect To Okefenokee

2.0 Model Selection and Inputs

2.1 Model Selection

The California Puff (CALPUFF, Version 5.711, Level 030625) air modeling system was used to model the Proposed Project and assess the AQRVs at ONWR. CALPUFF is a non-steady state Lagrangian Gaussian puff long-range (i.e., greater than 50 km) transport model that includes algorithms for building downwash effects as well as chemical transformations (important for visibility controlling pollutants), and wet/dry deposition. The CALMET model, a preprocessor to CALPUFF, is a diagnostic meteorological model that produces three-dimensional fields of wind and temperature and two-dimensional fields of other meteorological parameters. CALMET was designed to process raw meteorological, terrain, and land-use databases to be used in the air modeling analysis. The CALPUFF modeling system uses a number of FORTRAN preprocessor programs that extract data from large databases and converts the data into formats suitable for input to CALMET. The processed data produced from CALMET will be input to CALPUFF to assess pollutant specific impacts.

2.2 CALPUFF Model Settings

The CALPUFF settings contained in Table 2-1 were used for the modeling analyses.

2.3 Building Wake Effects

The CALPUFF analysis included the Generating Station's building dimensions to account for the effects of building-induced downwash on the emission sources. Dimensions for all significant building structures were processed with the Building Profile Input Program (BPIP), Version 95086, and included in the CALPUFF model input.

2.4 Receptor Locations

The CALPUFF analysis used an array of discrete receptors for ONWR, which were created and distributed by the NPS for standardized use in Class I analyses. Specifically, the array consists of 420 receptors spaced approximately every 1,750 meters, which cover the extent of the ONWR that lies beyond 50 km from the Generating Station. Terrain throughout the ONWR is included in the same NPS-provided receptor file. Only those receptors in the NPS file that lie beyond 50 km from the facility will be used in these

Table 2-1
CALPUFF Model Settings

Parameter	Setting
Pollutant Species	SO ₂ , SO ₄ , NO _x , HNO ₃ , and NO ₃ , and PM ₁₀
Chemical Transformation	MESOPUFF II scheme
Deposition	Include both dry and wet deposition, plume depletion
Meteorological/Land Use Input	CALMET
Plume Rise	Transitional plume rise, Stack-tip downwash, Partial plume penetration
Dispersion	Puff plume element, PG/MP coefficients, rural ISC mode, ISC building downwash scheme
Terrain Effects	Partial plume path adjustment
Output	Create binary concentration and wet/dry deposition files including output species for all pollutants.
Model Processing	<p><u>Regional Haze:</u> Highest predicted 24-hour change as processed by CALPOST.</p> <p><u>Deposition:</u> Highest predicted annual total sulfur and nitrogen values in deposition units.</p> <p><u>Class I SILs:</u> Highest predicted concentrations at the applicable averaging periods for those pollutants that exceed the respective PSD Significant Emission Levels (SELs).</p>
Background Values	<p>Monthly Ammonia: 0.5 ppb;</p> <p>Monthly background ozone was obtained from the Duval Co. monitor and was based on a review of the available values averaged for each month.</p> <p>Additionally, hourly background ozone values from the Duval Co. monitor were assessed for inclusion into the CALPUFF modeling.</p>

analyses. Figure 2-1 illustrates the receptors used in the CALPUFF Class I area air dispersion modeling analysis.

2.5 Meteorological Data Processing

The California Puff meteorological and geophysical data preprocessor (CALMET, Version 5.53, Level 030709) were used to develop the gridded parameter fields required for the refined AQRV modeling analyses. The following sections discuss the data used and processed in the CALMET model.

2.5.1 CALMET Settings

The CALMET settings, including horizontal and vertical grid coverage and resolution of prognostic mesoscale meteorological data, were chosen to adequately characterize the area within the CALMET domain.

2.5.2 Modeling Domain

The size of the domain used for the modeling was based on the distances needed to cover the area from the Generating Station to the receptors at the ONWR with at least an 80-km buffer zone in each direction. The modeling analysis was performed in the UTM coordinate system. A rectangular modeling domain extending 325 km in the east-west (x) direction and 250 km in the north-south (y) direction was used for the refined modeling analysis. The southwest corner of the domain is the origin and is located at 29.25 N degrees latitude and 84 W degrees longitude. The grid resolution for the domain was 5 km. A grid spacing of 5 km yields 65 grid cells in the x-direction and 50 grid cells in the y-direction. Figure 2-2 illustrates the size and location of the modeling domain.

2.5.3 Mesoscale Model Data

Pennsylvania State University in conjunction with the National Center for Atmospheric Research (NCAR) Assessment Laboratory have developed mesoscale meteorological (MM) data sets of prognostic wind fields, or “guess” fields, for the United States. The hourly meteorological variables used to create these data sets (wind, temperature, dew point depression, and geopotential height for eight standard levels and up to 15 significant levels) are extensive and are used to populate the modeling domain with meteorological data. The analysis used 1990 MM4 (generation 4), 1992 MM5 (generation 5), and 1996 MM5 mesoscale meteorological data sets to initialize the CALMET wind fields for each modeled year. The three years of MM data were obtained from a NPS database provided to Black & Veatch.

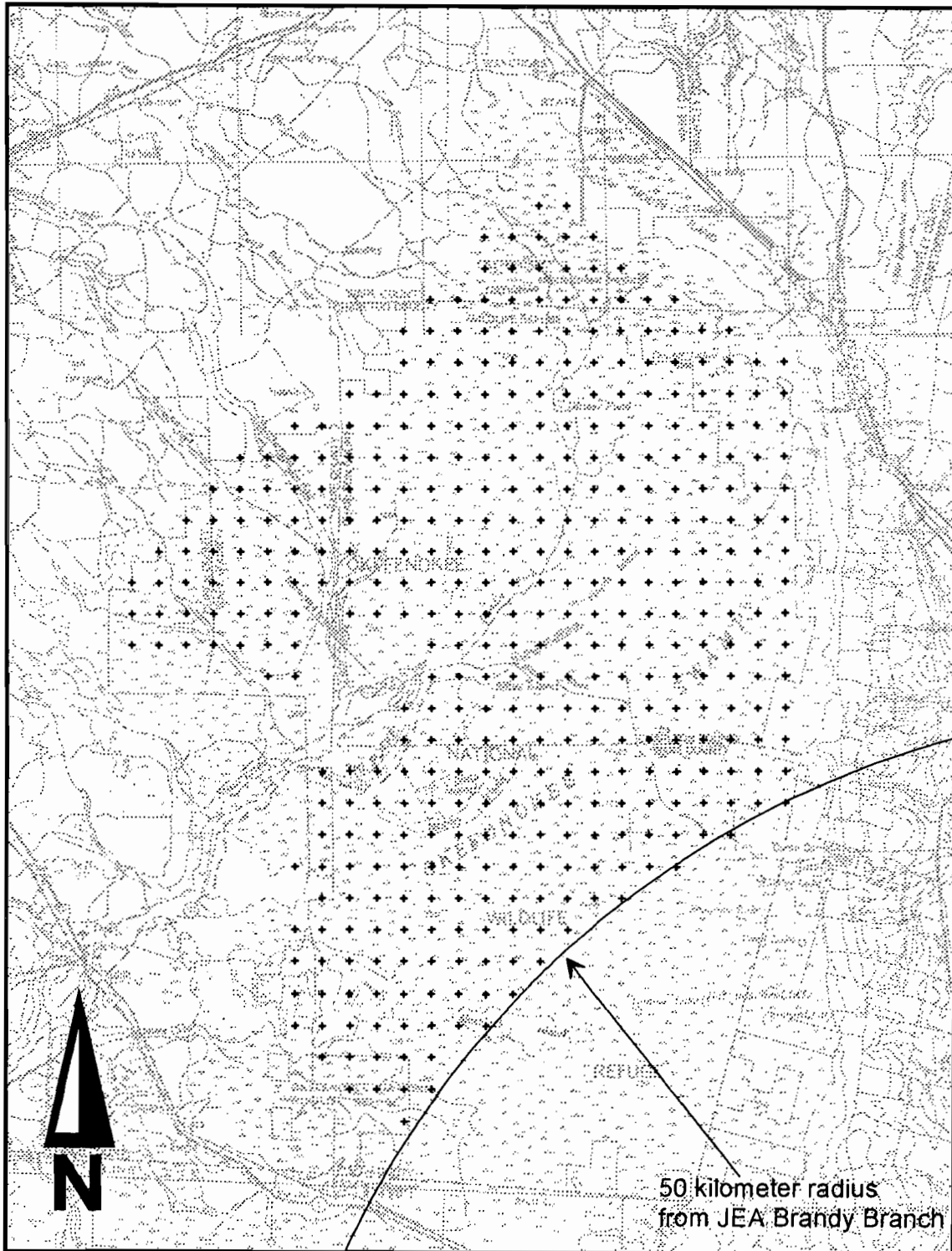


Figure 2-1
Okefenokee CALPUFF Receptors

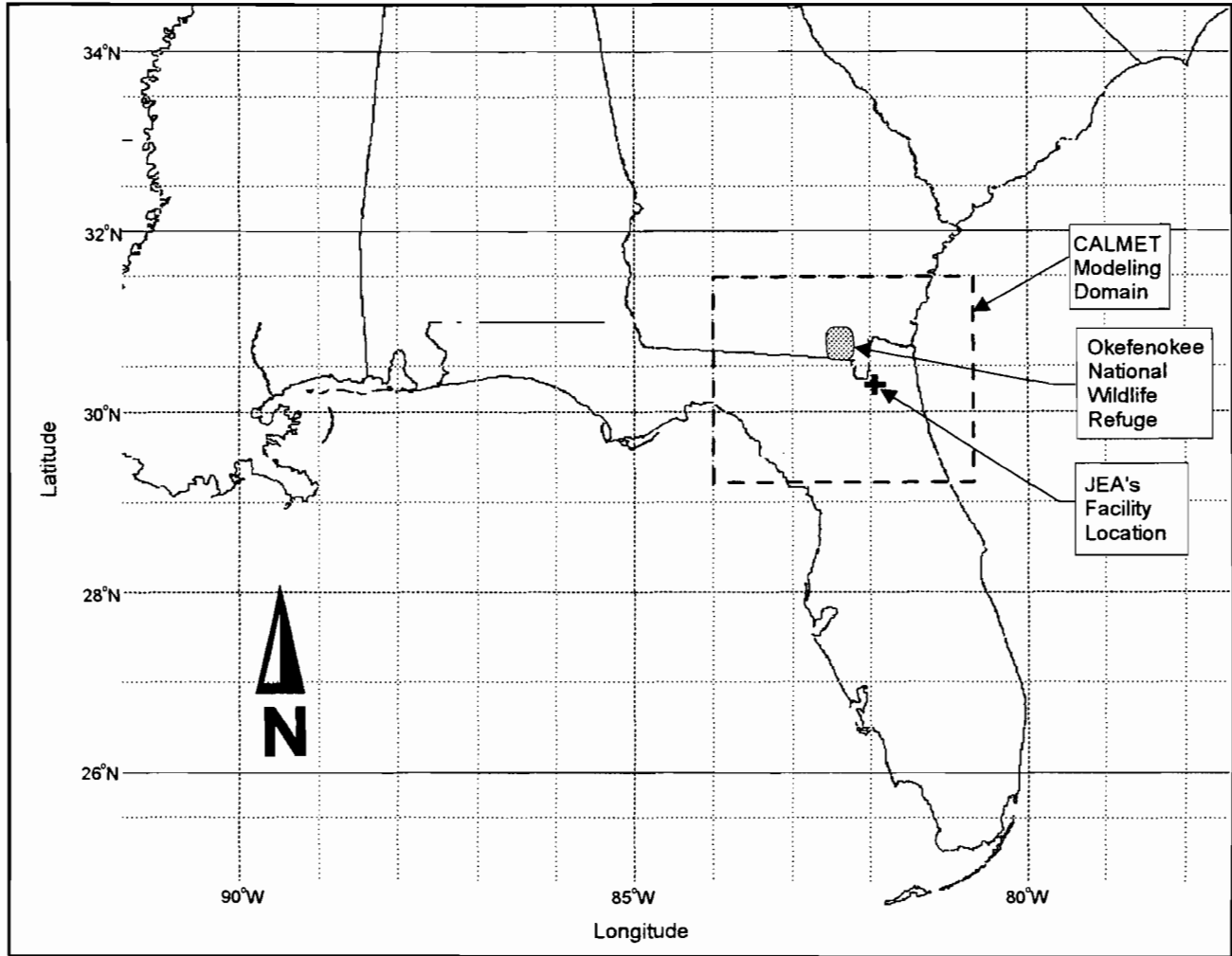


Figure 2-2
Modeling Domain

The extraction program accompanying the data was used to obtain the appropriate MM data points to cover the modeling domain. The 1990 MM4 and 1992 MM5 data have a horizontal spacing, or resolution, of 80 km. The 1996 MM5 data has a resolution of 36 km. The meteorological observations contained with the MM data sets are assumed to be of sufficient density, both temporally and spatially, to make the need for discrete meteorological station observation unnecessary. Thus, CALMET was run with the No Observations mode developed in the latest version available from the model developer, Earth Tech.

2.5.4 Geophysical Data Processing

Terrain elevations for each grid cell of the modeling domain were obtained from 1-degree Digital Elevation Model (DEM) files obtained from US Geographical Survey (USGS). The DEM data were extracted for the modeling domain grid using the CALMET preprocessor program TERREL. Land-use data, based on annual averaged values, were also obtained from the USGS. Land-use values for the domain grid were extracted with the preprocessor programs CTGCOMP and CTGPROC. Other parameters processed for the modeling domain include surface roughness, surface albedo, Bowen ratio, soil heat flux, and leaf index field. Once preprocessed, all of the land-use parameters were combined with the terrain information in a processor called MAKEGEO. This processor produces one GEO.DAT file for input to CALMET.

2.6 Proposed Project Emissions

The maximum pound per hour emission rates at 100% load and the average annual temperature of 59°F were used for the pollutants modeled with CALPUFF. Those pollutants include NO_x, SO₂, and PM₁₀. Tables 2-2 through 2-4 present the emissions and stack parameters used in the CALPUFF modeling analyses. The representative stack parameters and emission rates for each fuel type considered in the analysis are presented in Tables 2-2, 2-3, and 2-4. It should be noted that the information for the modeling is based on the following:

- May 1999 SCCT application document and subsequent permit (Permit No. PSD-FL-267).
- December 2000 CCCT application document and subsequent permit (Permit No. PSD-FL-310).
- March 2003 Duct Burner administrative change submittal and subsequent amended permit summer 2003.

- Conversations with the fuel vendor and GE turbine manufacturer indicated that the LSFO will have no change to or effect the operation of the turbine or electrical generation, stack parameters (flows and temperatures), or pollutant emissions except for an SO₂ reduction.

Spreadsheets used in determining the load based representative emissions and stack parameters from the aforementioned vendor performance data have been summarized and are included in Appendix A of Attachment 1. In general, given the new fuel sulfur values discussed above, the proposed operating scenarios, and thus the modeling scenarios represented in this report, are as follows:

- All three combustion turbines can be operated on 2.0 natural gas as dictated by their current permits' operating conditions which allow the simple cycle combustion turbine to operate 4,750 hours per year and the combined cycle units to operate 8,760 hours per year each while firing natural gas.
- The simple cycle combustion turbine can be operated up to 8 hours per day while the combined cycle units can be operated up to 24 hours/day while firing the LSFO on a short-term basis. On a long-term basis, the units can be operated on the LSFO as dictated by the proposed permits' operating conditions which allow the simple cycle combustion turbine to operate 1,000 hours per year and the combined cycle units to operate 1,000 hours per year each while firing natural gas with the remained of the year on 2.0 natural gas.
- The simple cycle combustion turbine can be operated up to 24 hours/day while firing the LSFO the combined cycle units shall not be fired on any fuel for the same 24 hours.

Table 2-2
Stack Parameters and Pollutant Emissions^a Used in CALPUFF Modeling Analysis
For Pollutants with Averaging Periods Less Than 24 Hours

Fuel	ISCST3 Source ID	Stack Height (m)	Stack Diameter (m)	Exit Velocity (m/s)	Exit Temp (K)	Pollutant Emission Rate (g/s)		
						NO _x	SO ₂ ^d	PM ₁₀
2.0 Natural Gas ^b	Simple Cycle	27.43	5.49	47.78	875.37	N/A	1.35	N/A
	Combined Cycle 1	57.91	5.49	20.15	368.71	N/A	1.47	N/A
	Combined Cycle 2	57.91	5.49	20.15	368.71	N/A	1.47	N/A
LSFO ^c	Simple Cycle	27.43	5.49	49.26	865.37	N/A	1.61	N/A
	Combined Cycle 1	57.91	5.49	22.95	402.59	N/A	1.69	N/A
	Combined Cycle 2	57.91	5.49	22.95	402.59	N/A	1.69	N/A

N/A indicates that the particular pollutant does not have an averaging period less than 24 hours.

^a The data used in the modeling analysis was based on the previous submittals referenced in Section 2.6 and summarized in spreadsheets included in Appendix A of Attachment 1.

^b The sulfur content of the 2.0 natural gas in the modeling was assumed to be 2 grains of sulfur per 100 standard cubic feet.

^c The sulfur content of the LSFO in the modeling was assumed to be 0.0065%.

^d Values represent the emissions used in the SO₂ 3-hour air dispersion modeling. These are the highest emission rates at 100% load 59°F ambient temperature.

Table 2-3
 Representative (Enveloped) Stack Parameters and Pollutant Emissions ^a Used in the CALPUFF Modeling Analysis
 For Pollutants with Averaging Periods of 24 Hours

Fuel	ISCST3 Source ID	Stack Height (m)	Stack Diameter (m)	Exit Velocity (m/s)	Exit Temp (K)	Pollutant Emission Rate (g/s)		
						NO _x ^d	SO ₂ ^d	PM ₁₀ ^d
2.0 Natural Gas ^b	Simple Cycle	27.43	5.49	47.78	875.37	9.98	1.35	1.13
	Combined Cycle 1	57.91	5.49	20.15	368.71	3.01	1.47	1.22
	Combined Cycle 2	57.91	5.49	20.15	368.71	3.01	1.47	1.22
LSFO ^c	Simple Cycle ^e	27.43	5.49	49.26	865.37	13.36	0.54	0.71
	Combined Cycle 1	57.91	5.49	22.95	402.59	14.16	1.69	2.26
	Combined Cycle 2	57.91	5.49	22.95	402.59	14.16	1.69	2.26
	Simple Cycle ^f	27.43	5.49	49.26	865.37	40.07	1.61	2.14

^a The data used in the modeling analysis was based on the previous submittals referenced in Section 2.6 and summarized in spreadsheets included in Appendix A of Attachment 1.

^b The sulfur content of the 2.0 natural gas in the modeling was assumed to be 2 grains of sulfur per 100 standard cubic feet.

^c The sulfur content of the LSFO in the modeling was assumed to be 0.0065%.

^d Values represent the emissions used in the NO_x, SO₂, and PM₁₀ 24-hour air dispersion modeling. These are the highest emission rates at 100% load 59°F ambient temperature. While NO_x does not directly have a 24-hour averaging period for Class I SILs, the value presented above was used in the regional haze portion of the analysis which is a daily AQRV.

^e The simple cycle unit was limited to operating 8 hours/day on LSFO when the combined cycle units are also operating on LSFO for 24 hours/day.

^f Additionally, with the limitation on LSFO simple cycle operation when the combined cycle units are also operating on LSFO, the simple cycle unit was separately modeled alone operating on fuel oil for the entire day (i.e., without the simultaneous operation of the combined cycle units on LSFO).

Table 2-4
 Representative (Enveloped) Stack Parameters and Pollutant Emissions ^a Used in the CALPUFF Modeling Analysis
 For Pollutants with Annual Averaging Periods

Operating Scenario/Fuel	ISCST3 Source ID	Stack Height (m)	Stack Diameter (m)	Exit Velocity (m/s)	Exit Temp (K)	Pollutant Emission Rate (g/s)		
						NO _x ^c	SO ₂ ^c	PM ₁₀ ^c
Annual Operation ^b	Simple Cycle	27.43	5.49	47.78	875.37	8.85	0.76	0.73
	Combined Cycle 1	57.91	5.49	20.15	368.71	4.29	1.50	1.34
	Combined Cycle 2	57.91	5.49	20.15	368.71	4.29	1.50	1.34

^a The data used in the modeling analysis was based on the previous submittals referenced in Section 2.6 and summarized in spreadsheets included in Appendix A of Attachment 1.

^b Annual operation assumes a combination of 2.0 natural gas and LSFO operation based on the proposed permit limits of 4,750 hours of 2.0 natural gas operation (of which 1,000 of those hours can be on LSFO) per year for the simple cycle unit and 8,760 hours of 2.0 natural gas operation (of which 1,000 of those hours can be on LSFO) operation per year for each combined cycle unit.

Additionally, the sulfur content of the 2.0 natural gas in the modeling was assumed to be 2 grains of sulfur per 100 standard cubic feet and the sulfur content of the LSFO in the modeling was assumed to be 0.0065%.

^c Values represent the emissions from the 100% load, annual average ambient temperature cases of 59°F averaged for the respective hours of operation on 2.0 natural gas and fuel oil mentioned in footnote a. These values were used in the annual SIL modeling for each pollutant, as well as the annual total nitrogen and total sulfur deposition analysis.

3.0 CALPUFF Analyses

The preceding model inputs and settings for the CALPUFF modeling system were used to complete the Class I analyses on the ONWR, including regional haze, deposition, and Class I SILs.

3.1 Regional Haze Analysis

A regional haze analysis was performed for the ONWR for ammonium sulfates, ammonium nitrates, and particulate matter by appropriately characterizing model predicted outputs of SO₄, NO₃, and PM₁₀ concentrations.

3.1.1 Visibility

Visibility is an AQRV for the ONWR. Visibility can take the form of plume blight for nearby areas, or regional haze for long distances (e.g., distances beyond 50 km). Because portions of the ONWR lie beyond 50 km from the Generating Station, the change in visibility is analyzed as regional haze at those locations of the ONWR. Regional haze impairs visibility in all directions over a large area by obscuring the clarity, color, texture, and form of what is seen. Current regional haze guidelines characterize a change in visibility by either of the following methods:

1. Change in the visual range, defined as the greatest distance that a large dark object can be seen, or
2. Change in the light-extinction coefficient (b_{ext}).

Visual range can be related to extinction with the following equation:

$$b_{ext}(Mm^{-1}) = 3912 / vr(Mm^{-1})$$

Visual range (vr) is a measure of how far away a large black object can be seen in the atmosphere under several severe assumptions including: an absolutely dark target, uniform lighting conditions (cloud free skies), uniform extinction in all directions, a limiting contrast discrimination level, a target high enough in elevation to account for earth curvature, and several other factors. Visual range is, at best, a limited concept that allows relatively simple comparisons between visual air quality levels and should not be thought of as the absolute distance that can be seen through the atmosphere.

The b_{ext} is the attenuation of light per unit distance due to the scattering (light reduced away from the site path) and absorption (light captured by aerosols and turned into heat energy) by gases and particles in the atmosphere. A change in the extinction coefficient produces a perceived visual change that is measured by a visibility index called the deciview. The deciview (dv) is defined as:

$$dv = 10 \ln (1 + b_{exts} / b_{extb})$$

where: b_{exts} is the extinction coefficient calculated for the source, and
 b_{extb} is the background extinction coefficient

A uniform incremental change in b_{extb} or visual range does not necessarily result in uniform changes in perceived visual air quality. In fact, perceived changes in visibility are best related to a change in b_{extb} , or, percent change in extinction. Based on NPS guidance, if the change in extinction is less than 5 percent, no further analysis is required. An index similar to the deciview that simply quantifies the percent change in visibility due to the operation of a source is calculated as:

$$\Delta\% = (b_{exts} / b_{extsb}) \times 100$$

3.1.2 Background Visual Ranges and Relative Humidity Factors

The background visual range is based on data representative of historical conditions at the ONWR. The background visual range, or constituents thereof, for the ONWR was obtained from the Phase I FLAG Report, December 2000. The average relative humidity factor for each day was computed by determining the relative humidity factor for each hour's relative humidity for the 24-hour period that the impact occurred. This factor, based on each relative humidity can be obtained by using Table 2.A-1 of Appendix 2.A of the Phase I FLAG Report. These factors (a relative humidity factor for each relative humidity) were then be used to determine the average relative humidity factor for that day (24-hour period). All of this is accomplished with the use of the CALPOST post-processor.

3.1.3 Interagency Workgroup On Air Quality Modeling (IWAQM) Guidelines

The CALPUFF air modeling analysis closely followed the recommendations contained in the *IWAQM Phase II Summary Report and Recommendations for Modeling Long Range Transport Impacts*, (EPA, 12/98) where appropriate. Table 3-1 summarizes the IWAQM Phase II recommendations. The methodology in Table 3-1 was used to compute the results of the regional haze analysis. However, CALPOST now possesses the ability to

Table 3-1

Outline of IWAQM Refined Modeling Analyses Recommendations *

Meteorology	Use CALMET (minimum 6 to 10 layers in the vertical; top layer must extend above the maximum mixing depth expected); horizontal domain extends 50 to 80 km beyond outer receptors and source being modeled; terrain elevation and land-use data is resolved for the situation.
Receptors	Within Class I area(s) of concern; NPS provided the modeling receptors.
Dispersion	<ol style="list-style-type: none"> 1. CALPUFF with default dispersion settings. 2. Use MESOPUFF II chemistry with wet and dry deposition 3. Define background values for ozone and ammonia for area
Processing	Use highest predicted 24-hr SO ₄ , PM ₁₀ and NO ₃ values; compute a day-average relative humidity factor (f(RH)) for the worst day for each predicted species, calculate extinction coefficients and compute percent change in extinction using the FLAG supplied background extinction where appropriate. This can all now be accomplished with the use of the CALPOST post-processor.

* *IWAQM Phase II Summary Report and Recommendations for Modeling Long Range Transport Impacts* (EPA, 12/98).

post-process the modeling results specific to the regional haze analysis through the selection of one of seven modeling options. The post-processing selection was made to calculate regional haze based on the appropriate available data/resources. Specifically, regional haze was calculated using method 2, which consists of computing extinctions from speciated PM measurements using hourly relative humidity adjustments for observed and modeled sulfate and nitrates. Based on recent correspondence with staff of the NPS, the relative humidity was capped at 95 percent. A supplementary analysis was performed with the relative humidity capped at 98 percent for informational purposes only. While this process occurs within CALPOST, a typical calculation methodology is illustrated below.

Calculation

Refined impacts were calculated as follows:

1. Obtain 24-hour SO₄, NO₃, and PM₁₀ impacts, in units of micrograms per cubic meter (µg/m³).

2. Convert the SO₄ impact to (NH₄)₂SO₄ by the following formula:

$$(NH_4)_2SO_4 (\mu g/m^3) = SO_4 (\mu g/m^3) \times \text{molecular weight } (NH_4)_2SO_4 / \text{molecular weight } SO_4$$

$$(NH_4)_2SO_4 (\mu g/m^3) = SO_4 (\mu g/m^3) \times 132/96 = SO_4 (\mu g/m^3) \times 1.375$$

Convert the NO₃ impact to NH₄NO₃ by the following formula:

$$NH_4NO_3 (\mu g/m^3) = NO_3 (\mu g/m^3) \times \text{molecular weight } NH_4NO_3 / \text{molecular weight } NO_3$$

$$NH_4NO_3 (\mu g/m^3) = NO_3 (\mu g/m^3) \times 80/62 = NO_3 (\mu g/m^3) \times 1.29$$

3. Compute b_{exts} (extinction coefficient calculated for the source) with the following formula:

$$b_{exts} = 3 \times NH_4NO_3 \times f(RH) + 3 \times (NH_4)_2SO_4 \times f(RH) + 1 \times PM_{10}$$

4. Compute b_{extb} (background extinction coefficient) using the background visual range (km) from the FLAG document with the following formula:

$$b_{extb} = 3.912 / \text{Visual range (km)}$$

5. Compute the change in extinction coefficients:

in terms of deciviews:

$$dv = 10 \ln (1 + b_{exts} / b_{extb})$$

in terms of percent change of visibility:

$$\Delta\% = (b_{exts} / b_{extsb}) \times 100$$

Based on the predicted SO₄, NO₃, and PM₁₀ concentrations, the Proposed Project's emissions were compared to a 5 percent change in light extinction of the background levels. This is equivalent to a change in deciview of 0.5. As illustrated in Table 3-2, the regional haze results are less than the 5% change in extinction threshold and as such, no further analysis is necessary.

**Table 3-2
Regional Haze Results ^a**

Fuel	Modeled Year	Change in Extinction ^b (%)	Recommended Threshold (%)
2.0 Natural Gas ^c	1990	0.77	5
	1992	1.46	5
	1996	1.66	5
LSFO ^d	1990	2.08	5
	1992	4.73	5
	1996	3.36	5
LSFO ^e	1990	1.46	5
	1992	2.46	5
	1996	2.94	5

^a The results represent a relative humidity cap value of 95%. Additionally, the relative humidity was capped at 98% for informational purposes only. The results indicated only 3 values of the recommended 5 percent threshold over all three years modeled with the largest value being only 5.68%.

^b Change in extinction was compared against the natural conditions presented in the FLAG 2000 document.

^c Results represent all three combustion turbines operating on 2.0 natural gas for 24 hours/day.

^d Results represent the simple cycle unit operating 8 hours/day on LSFO when the combined cycle units are also operating on LSFO for 24 hours/day.

^e Results represent the simple cycle unit operating 24 hours/day on LSFO without the simultaneous operation of the combined cycle units. This modeling demonstrates that while the simple cycle unit can operate on a limited basis (i.e., 8 hours/day) with the combined cycle units while firing LSFO, the simple cycle unit can also operate the full day on fuel oil when operated alone (i.e., without the combined cycle units).

3.2 Deposition Analyses

Deposition analyses was performed for the ONWR for both total sulfur and total nitrogen. The analyses closely followed those procedures and methodologies set forth in the IWAQM Phase II Report. Specifically, deposition analyses was performed as follows:

1. Perform CALPUFF model runs using the specified options previously mentioned in Section 2.0 (including output of both dry and wet deposition).
2. Use POSTUTIL to combine the wet and dry flux output files from CALPUFF and scale the contributions of SO₂, SO₄, NO_x, NO₃, and HNO₃ such that total (i.e., wet and dry) nitrogen and total sulfur flux are contained in the same file. The POSTUTIL file is set up such that SO₂ and SO₄ contribute sulfur mass and SO₄, NO_x, HNO₃, and NO₃ contribute to the nitrogen mass.
3. Apply the appropriate scaling factors found in IWAQM Phase II Report (Section 3.3 Deposition Calculations) to the CALPOST runs to account for the conversion of grams to kilograms, square meters to hectares (ha), seconds to hours, and hours to a year. Thus, the CALPOST results are in kg/ha/yr.

Table 3-3 presents the results of the deposition analysis for each of the three modeling years. As illustrated in the table, the deposition results are less than the 0.01 Deposition Analysis Threshold (DAT) and as such, no further analysis is necessary.

3.3 Class I Impact Analysis

Ground-level impacts (in $\mu\text{g}/\text{m}^3$) onto to the ONWR were calculated for NO_x, SO₂, and PM₁₀ criteria pollutants for each applicable averaging period. The results of this analysis were compared with the Class I Significant Impact Levels (SILs) calculated as 4 percent of the Class I Increment values. Tables 3-4 through 3-6 present the results of the Class I analysis for each of the three modeling years repectively. As illustrated in the table, there are no violations of the Class I SILs and as such, no further analysis is necessary.

Table 3-3
Deposition Results

Fuel	Modeled Year	Total Nitrogen Deposition ^a (kg/ha/yr)	Total Sulfur Deposition ^b (kg/ha/yr)	Deposition Analysis Threshold ^c
2.0 Natural Gas ^d	1990	0.003	0.004	0.01
	1992	0.003	0.003	0.01
	1996	0.003	0.003	0.01
LSFO ^e	1990	0.004	0.004	0.01
	1992	0.003	0.003	0.01
	1996	0.004	0.003	0.01

^a Includes both wet and dry deposition with SO₄, NO_x, HNO₃, and NO₃ contributing to the nitrogen mass.

^b Includes both wet and dry deposition with SO₂ and SO₄ contributing sulfur mass.

^c For all areas East of the Mississippi River.

^d As deposition is an annual AQRV, results represent all three combustion turbines operating on 2.0 natural gas for the entire year with no daily restrictions on operation. This is conservative as the simple cycle unit is restricted to 4,750 hours of operation per year regardless of fuel.

^e As deposition is an annual AQRV, results represent all combustion units operating on a combination of 2.0 natural gas and LSFO operation based on the proposed permit limits of 4,750 hours of 2.0 natural gas operation (of which 1,000 of those hours can be on LSFO) per year for the simple cycle unit and 8,760 hours of 2.0 natural gas operation (of which 1,000 of those hours can be on LSFO) operation per year for each combined cycle unit.

Table 3-4
1990 Significant Impact Level Modeling Results

Fuel	Modeled Year	Pollutant and Averaging Period	Modeled Impact ($\mu\text{g}/\text{m}^3$)	Significant Impact Level ^a ($\mu\text{g}/\text{m}^3$)	Exceed SIL?
2.0 Natural Gas ^b	1990	NO _x – Annual	0.004	0.10	NO
		PM ₁₀ – Annual	0.002	0.16	NO
		PM ₁₀ – 24-hour	0.040	0.32	NO
		SO ₂ – Annual	0.002	0.08	NO
		SO ₂ – 24-hour	0.040	0.20	NO
		SO ₂ – 3-hour	0.150	1.0	NO
LSFO ^c	1990	NO _x – Annual	0.005	0.10	NO
		PM ₁₀ – Annual	0.002	0.16	NO
		PM ₁₀ – 24-hour	0.050	0.32	NO
		SO ₂ – Annual	0.002	0.08	NO
		SO ₂ – 24-hour	0.040	0.20	NO
		SO ₂ – 3-hour	0.150	1.0	NO
LSFO ^d	1990	NO _x – Annual	N/A	0.10	NO
		PM ₁₀ – Annual	N/A	0.16	NO
		PM ₁₀ – 24-hour	0.020	0.32	NO
		SO ₂ – Annual	N/A	0.08	NO
		SO ₂ – 24-hour	0.010	0.20	NO
		SO ₂ – 3-hour	N/A	1.0	NO

N/A indicates that the particular averaging period is not applicable to the operating scenario.

^a Class I Significant Impact Levels are calculated as 4% of the PSD Class I Increment values.

^b Results represent all three combustion turbines operating on 2.0 natural gas simultaneously for the entire year with no daily restrictions on operation. This is conservative as the simple cycle unit is restricted to 4,750 hours of operation per year regardless of fuel.

^c The annual results represent all combustion units operating on a combination of 2.0 natural gas and LSFO operation based on the proposed permit limits of 4,750 hours of 2.0 natural gas operation (of which 1,000 of those hours can be on LSFO) per year for the simple cycle unit and 8,760 hours of 2.0 natural gas operation (of which 1,000 of those hours can be on LSFO) operation per year for each combined cycle unit. The 24-hour results represent the simple cycle unit operating 8 hours/day on LSFO when the combined cycle units are also operating on LSFO for the entire day. The 3-hour results represent all three combustion turbines operating simultaneously on LSFO.

^d Results represent the simple cycle unit operating 24 hours/day on LSFO without the simultaneous operation of the combined cycle units. This modeling demonstrates that while the simple cycle unit can operate on a limited basis (i.e., 8 hours/day) with the combined cycle units while firing LSFO, the simple cycle unit can also operate the full day on fuel oil when operated alone (i.e., without the combined cycle units). Unrestricted annual and 3-hour modeling is already represented in the LSFO entry footnoted as “c” above.

**Table 3-5
1992 Significant Impact Level Modeling Results**

Fuel	Modeled Year	Pollutant and Averaging Period	Modeled Impact ($\mu\text{g}/\text{m}^3$)	Significant Impact Level ^a ($\mu\text{g}/\text{m}^3$)	Exceed SIL?
2.0 Natural Gas ^b	1992	NO _x – Annual	0.004	0.10	NO
		PM ₁₀ – Annual	0.002	0.16	NO
		PM ₁₀ – 24-hour	0.050	0.32	NO
		SO ₂ – Annual	0.002	0.08	NO
		SO ₂ – 24-hour	0.060	0.20	NO
		SO ₂ – 3-hour	0.170	1.0	NO
LSFO ^c	1992	NO _x – Annual	0.005	0.10	NO
		PM ₁₀ – Annual	0.002	0.16	NO
		PM ₁₀ – 24-hour	0.070	0.32	NO
		SO ₂ – Annual	0.002	0.08	NO
		SO ₂ – 24-hour	0.060	0.20	NO
		SO ₂ – 3-hour	0.170	1.0	NO
LSFO ^d	1992	NO _x – Annual	N/A	0.10	NO
		PM ₁₀ – Annual	N/A	0.16	NO
		PM ₁₀ – 24-hour	0.020	0.32	NO
		SO ₂ – Annual	N/A	0.08	NO
		SO ₂ – 24-hour	0.020	0.20	NO
		SO ₂ – 3-hour	N/A	1.0	NO

N/A indicates that the particular averaging period is not applicable to the operating scenario.

^a Class I Significant Impact Levels are calculated as 4% of the PSD Class I Increment values.

^b Results represent all three combustion turbines operating on 2.0 natural gas simultaneously for the entire year with no daily restrictions on operation. This is conservative as the simple cycle unit is restricted to 4,750 hours of operation per year regardless of fuel.

^c The annual results represent all combustion units operating on a combination of 2.0 natural gas and LSFO operation based on the proposed permit limits of 4,750 hours of 2.0 natural gas operation (of which 1,000 of those hours can be on LSFO) per year for the simple cycle unit and 8,760 hours of 2.0 natural gas operation (of which 1,000 of those hours can be on LSFO) operation per year for each combined cycle unit. The 24-hour results represent the simple cycle unit operating 8 hours/day on LSFO when the combined cycle units are also operating on LSFO for the entire day. The 3-hour results represent all three combustion turbines operating simultaneously on LSFO.

^d Results represent the simple cycle unit operating 24 hours/day on LSFO without the simultaneous operation of the combined cycle units. This modeling demonstrates that while the simple cycle unit can operate on a limited basis (i.e., 8 hours/day) with the combined cycle units while firing LSFO, the simple cycle unit can also operate the full day on fuel oil when operated alone (i.e., without the combined cycle units). Unrestricted annual and 3-hour modeling is already represented in the LSFO entry footnoted as “c” above.

**Table 3-6
1996 Significant Impact Level Modeling Results**

Fuel	Modeled Year	Pollutant and Averaging Period	Modeled Impact ($\mu\text{g}/\text{m}^3$)	Significant Impact Level ^a ($\mu\text{g}/\text{m}^3$)	Exceed SIL?
2.0 Natural Gas ^B	1996	NO _x – Annual	0.006	0.10	NO
		PM ₁₀ – Annual	0.003	0.16	NO
		PM ₁₀ – 24-hour	0.040	0.32	NO
		SO ₂ – Annual	0.003	0.08	NO
		SO ₂ – 24-hour	0.050	0.20	NO
		SO ₂ – 3-hour	0.200	1.0	NO
LSFO ^c	1996	NO _x – Annual	0.007	0.10	NO
		PM ₁₀ – Annual	0.003	0.16	NO
		PM ₁₀ – 24-hour	0.060	0.32	NO
		SO ₂ – Annual	0.003	0.08	NO
		SO ₂ – 24-hour	0.040	0.20	NO
		SO ₂ – 3-hour	0.210	1.0	NO
LSFO ^d	1996	NO _x – Annual	N/A	0.10	NO
		PM ₁₀ – Annual	N/A	0.16	NO
		PM ₁₀ – 24-hour	0.020	0.32	NO
		SO ₂ – Annual	N/A	0.08	NO
		SO ₂ – 24-hour	0.010	0.20	NO
		SO ₂ – 3-hour	N/A	1.0	NO

N/A indicates that the particular averaging period is not applicable to the operating scenario.

^a Class I Significant Impact Levels are calculated as 4% of the PSD Class I Increment values.

^b Results represent all three combustion turbines operating on 2.0 natural gas simultaneously for the entire year with no daily restrictions on operation. This is conservative as the simple cycle unit is restricted to 4,750 hours of operation per year regardless of fuel.

^c The annual results represent all combustion units operating on a combination of 2.0 natural gas and LSFO operation based on the proposed permit limits of 4,750 hours of 2.0 natural gas operation (of which 1,000 of those hours can be on LSFO) per year for the simple cycle unit and 8,760 hours of 2.0 natural gas operation (of which 1,000 of those hours can be on LSFO) operation per year for each combined cycle unit. The 24-hour results represent the simple cycle unit operating 8 hours/day on LSFO when the combined cycle units are also operating on LSFO for the entire day. The 3-hour results represent all three combustion turbines operating simultaneously on LSFO.

^d Results represent the simple cycle unit operating 24 hours/day on LSFO without the simultaneous operation of the combined cycle units. This modeling demonstrates that while the simple cycle unit can operate on a limited basis (i.e., 8 hours/day) with the combined cycle units while firing LSFO, the simple cycle unit can also operate the full day on fuel oil when operated alone (i.e., without the combined cycle units). Unrestricted annual and 3-hour modeling is already represented in the LSFO entry footnoted as “c” above.

Attachment 3

Title V Forms



Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit for a proposed project:

- subject to prevention of significant deterioration (PSD) review, nonattainment area (NAA) new source review, or maximum achievable control technology (MACT) review; or
- where the applicant proposes to assume a restriction on the potential emissions of one or more pollutants to escape a federal program requirement such as PSD review, NAA new source review, Title V, or MACT; or
- at an existing federally enforceable state air operation permit (FESOP) or Title V permitted facility.

Air Operation Permit – Use this form to apply for:

- an initial federally enforceable state air operation permit (FESOP); or
- an initial/revised/renewal Title V air operation permit.

Air Construction Permit & Revised/Renewal Title V Air Operation Permit (Concurrent Processing Option) – Use this form to apply for both an air construction permit and a revised or renewal Title V air operation permit incorporating the proposed project.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: JEA	
2. Site Name: Brandy Branch Generating Station	
3. Facility Identification Number: 0310485	
4. Facility Location...: Street Address or Other Locator: JEA Brandy Branch Generating Station City: Baldwin City County: Duval Zip Code: 32234	
5. Relocatable Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6. Existing Title V Permitted Facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Application Contact

1. Application Contact Name: N. Bert Gianazza, P.E.	
2. Application Contact Mailing Address... Organization/Firm: JEA Street Address: 21 West Church Street City: Jacksonville State: FL Zip Code: 32202-3139	
3. Application Contact Telephone Numbers... Telephone: (904) 665-6247 ext. Fax: (904) 665-7376	
4. Application Contact Email Address: giannb@jea.com	

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	
2. Project Number(s):	
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

APPLICATION INFORMATION

Purpose of Application

This application for air permit is submitted to obtain: (Check one)

Air Construction Permit

Air construction permit.

Air Operation Permit

Initial Title V air operation permit.

Title V air operation permit revision.

Title V air operation permit renewal.

Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.

Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

Air construction permit and Title V permit revision, incorporating the proposed project.

Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

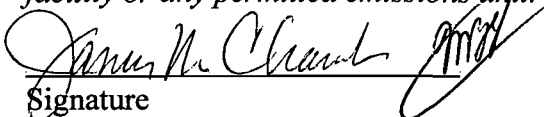
Application Comment

This application is for permitting of an alternate operating scenario of use of a lower sulfur fuel oil (0.0065% sulfur, by weight) in Unit 1, Unit 2 and Unit 3. In conjunction with permitting a lower sulfur fuel oil, which will result in reduced hourly SO₂ emission rates when firing fuel oil, this application seeks to relax current permit limits on the firing of fuel oil in the aforementioned emission units. This application is also for the incorporation of these new changes and changes covered by Construction Permit No. PSD-FL-310 into a revision of Title V operation permit No. 0310485-005-AV. As required by §62-213.420(1)(a).4, F.A.C., this application includes a compliance schedule and methodology in Attachment G. Hereinafter, pipeline quality natural gas with a maximum sulfur content of 2 grains per 100 standard cubic foot will be referred to as 2.0 natural gas. Also, hereinafter reference to No. 2 distillate fuel oil, as the facility is currently permitted to use, is typically referred to as simply fuel oil or 0.05% sulfur fuel oil. However, in some circumstances the use of the term fuel oil is used to refer to both 0.05% sulfur fuel oil and the ultra low sulfur fuel oil (0.0065% sulfur), such as where emission estimate information is given in Form F1 (except in reference to SO₂ emissions), as emissions of pollutants other than SO₂ are expected to be the same regardless of whether 0.05% sulfur fuel oil or the lower sulfur fuel oil is used.

APPLICATION INFORMATION

Owner/Authorized Representative Statement

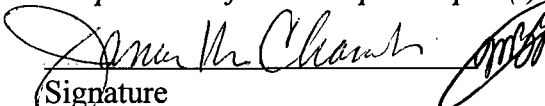
Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name : Mr. James M. Chansler, P.E., D.P.A., Vice President, Operations and Maintenance
2. Owner/Authorized Representative Mailing Address... Organization/Firm: JEA Street Address: 21 West Church Street City: Jacksonville State: FL Zip Code: 32202
3. Owner/Authorized Representative Telephone Numbers... Telephone: (904) 665-4433 ext..... Fax: (904) 665-7990
4. Owner/Authorized Representative Email Address:.....
5. Owner/Authorized Representative Statement: <i>I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other requirements identified in this application to which the facility is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit.</i>  Signature 3.9.04 Date

APPLICATION INFORMATION

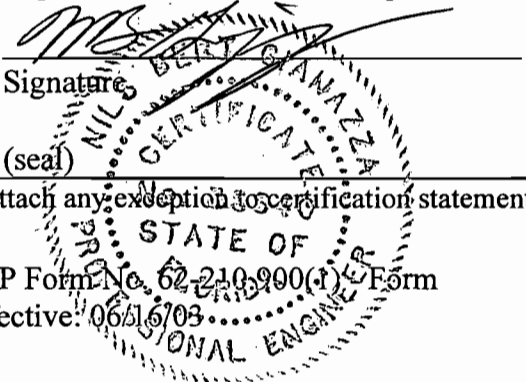
Application Responsible Official Certification

Complete if applying for an initial/revised/renewal Title V permit or concurrent processing of an air construction permit and a revised/renewal Title V permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name: Mr. James M. Chansler, P.E., D.P.A., Vice President, Operations and Maintenance
2. Application Responsible Official Qualification (Check one or more of the following options, as applicable): <input type="checkbox"/> For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C. <input type="checkbox"/> For a partnership or sole proprietorship, a general partner or the proprietor, respectively. <input checked="" type="checkbox"/> For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official. <input type="checkbox"/> The designated representative at an Acid Rain source.
3. Application Responsible Official Mailing Address... Organization/Firm: JEA Street Address: 21 West Church Street City: Jacksonville State: Florida Zip Code: 32202
4. Application Responsible Official Telephone Numbers... Telephone: (904) 665-4433 ext. Fax: (904) 665-7990
5. Application Responsible Official Email Address:
6. Application Responsible Official Certification: <i>I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.</i> Signature:  Date: <u>3.9.04</u>

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: N. Bert Gianazza Registration Number: 38640
2. Professional Engineer Mailing Address... Organization/Firm: JEA Street Address: 21 West Church Street City: Jacksonville State: FL Zip Code: 32202
3. Professional Engineer Telephone Numbers... Telephone: (904) 665-6247 ext. Fax: (904) 665-7376
4. Professional Engineer Email Address: giannb@jea.com
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> (1) <i>To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and</i> (2) <i>To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.</i> (3) <i>If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/>, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.</i> (4) <i>If the purpose of this application is to obtain an air construction permit (check here <input type="checkbox"/>, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input checked="" type="checkbox"/>, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.</i> (5) <i>If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input checked="" type="checkbox"/>, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.</i> Signature: <u><i>N. Bert Gianazza</i></u> Date: <u>3/9/04</u> (seal) 

* Attach any exception to certification statement.

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: N. Bert Gianazza Registration Number: 38640
2. Professional Engineer Mailing Address... Organization/Firm: JEA Street Address: 21 West Church Street City: Jacksonville State: FL Zip Code: 32202
3. Professional Engineer Telephone Numbers... Telephone: (904) 665-6247 ext. Fax: (904) 665-7376
4. Professional Engineer Email Address: giannb@jea.com
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> <i>(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and</i> <i>(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.</i> <i>(3) If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/>, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.</i> <i>(4) If the purpose of this application is to obtain an air construction permit (check here <input type="checkbox"/>, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input checked="" type="checkbox"/>, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.</i> <i>(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input checked="" type="checkbox"/>, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.</i> _____ Signature _____ Date (seal)

* Attach any exception to certification statement.

FACILITY INFORMATION

Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a “major source” and a “synthetic minor source.”

1.	<input type="checkbox"/> Small Business Stationary Source	<input type="checkbox"/> Unknown
2.	<input type="checkbox"/> Synthetic Non-Title V Source	
3.	<input checked="" type="checkbox"/> Title V Source	
4.	<input checked="" type="checkbox"/> Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5.	<input type="checkbox"/> Synthetic Minor Source of Air Pollutants, Other than HAPs	
6.	<input type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs)	
7.	<input type="checkbox"/> Synthetic Minor Source of HAPs	
8.	<input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9.	<input type="checkbox"/> One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10.	<input type="checkbox"/> One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11.	<input type="checkbox"/> Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12.	Facility Regulatory Classifications Comment:	

FACILITY INFORMATION

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. A</u> <input type="checkbox"/> Previously Submitted, Date:
2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. B</u> <input type="checkbox"/> Previously Submitted, Date:
3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. C</u> <input type="checkbox"/> Previously Submitted, Date:

Additional Requirements for Air Construction Permit Applications

1. Area Map Showing Facility Location: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable (existing permitted facility)
2. Description of Proposed Construction or Modification: <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. D</u>
3. Rule Applicability Analysis: <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. E</u>
4. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable (no exempt units at facility)
5. Fugitive Emissions Identification (Rule 62-212.400(2), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
6. Preconstruction Air Quality Monitoring and Analysis (Rule 62-212.400(5)(f), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
7. Ambient Impact Analysis (Rule 62-212.400(5)(d), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
8. Air Quality Impact since 1977 (Rule 62-212.400(5)(h)5., F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
9. Additional Impact Analyses (Rules 62-212.400(5)(e)1. and 62-212.500(4)(e), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

EMISSIONS UNIT INFORMATION

Section [1] of [4]

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application - Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION

Section [1] of [4]

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:		
2. Maximum Production Rate:		
3. Maximum Heat Input Rate: 1,935 million Btu/hr (LHV)		
4. Maximum Incineration Rate:	pounds/hr	
	tons/day	
5. Requested Maximum Operating Schedule:		
2.0 natural gas firing	24 hours/day	7 days/week
	52 weeks/year	4,750 hours/year
Fuel oil firing	16 hours/day	7 days/week
	52 weeks/year	750 hours/year
Lower sulfur fuel oil firing	24 hours/day	7 days/week
	52 weeks/year	1,000 hours/year
6. Operating Capacity/Schedule Comment:		
<p>The maximum heat input (mmBtu/hr) given in Permit No. 0310485-005-AV, based on the lower heating value (LHV) of each fuel, at ambient conditions of 59°F temperature, 60% relative humidity, 100% load and 14.7 psi pressure, are as follows:</p> <p>2.0 natural gas firing: 1,623</p> <p>Fuel oil firing: 1,822</p> <p>These maximum heat input rates will vary depending upon ambient conditions and the combustion turbine characteristics. The heat input rates are included in the permit only for purposes of determining capacity during performance tests. Continuous compliance with these rates is not required. The maximum projected heat input rates are with operation at an ambient temperature of 20°F and are as follows.</p> <p>2.0 natural gas firing @ 20F, 100% load = 1,736 (LHV)</p> <p>Fuel oil firing @20F, 100% load = 1,935 (LHV)</p> <p>It is suggested that Unit No.1 be limited to a total of 8 hours of operation on either 2.0 natural gas or the lower sulfur fuel oil on days when the lower sulfur fuel oil is fired in either Unit No. 2 or Unit No. 3. On days in which the lower sulfur fuel oil is not fired in either Unit No. 2 or Unit No. 3 there should be no daily restriction on operation of Unit No. 1, i.e. Unit No. 1 will be allowed to operate 24 hours on either 2.0 natural gas or lower sulfur fuel oil. This 24 hour per day scenario is reflected in Field 5 above.</p>		

EMISSIONS UNIT INFORMATION

Section [1] of [4]

**C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)****Emission Point Description and Type**

1. Identification of Point on Plot Plan or Flow Diagram: Item No. 23 on Plot Plan		2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: Single stack			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code: V	6. Stack Height: 90 feet		7. Exit Diameter: 18.0 feet
8. Exit Temperature: 1,116 °F	9. Actual Volumetric Flow Rate: 2,393,300 acfm		10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: 17 East (km): 408.835 North (km): 3354.491		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment: Exit temperature and flow rate are for operation of the combustion turbine on 2.0 natural gas at an ambient temperature of 59°F and operation at 100% load.			

EMISSIONS UNIT INFORMATION

Section [1] of [4]

D. SEGMENT (PROCESS/FUEL) INFORMATION**Segment Description and Rate:** Segment 1 of 3

1. Segment Description (Process/Fuel Type): Simple cycle combustion turbine burning 2.0 natural gas.		
2. Source Classification Code (SCC): 2-01-002-01		3. SCC Units: Million Cubic Feet Burned
4. Maximum Hourly Rate: 1.99 (approx.)	5. Maximum Annual Rate: 8,870 (approx.)	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: 869 (LHV)
10. Segment Comment: Approximate fuel use rate calculations: (heat input at LHV)/(fuel LHV) = hourly rate (1,736 mmBtu/hr)/(869 million scf/mmBtu) = 1.99 million scf/hour [(1,623 mmBtu/hr)/(869 million scf/mmBtu)]x(4,750 hr/yr) = 8,871 million scf/yr Approximate fuel use rates are provided for informational purposes only and do not constitute limits. Actual fuel use rates are a function of the fuel heating value and the emission unit operating conditions.		

Segment Description and Rate: Segment 2 of 3

1. Segment Description (Process/Fuel Type): Simple cycle combustion turbine burning 0.05% sulfur No. 2 distillate fuel oil.		
2. Source Classification Code (SCC): 2-01-001-01		3. SCC Units: Thousand Gallons Burned
4. Maximum Hourly Rate: 13.9 (approx.)	5. Maximum Annual Rate: 10,431 (approx.)	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.05	8. Maximum % Ash:	9. Million Btu per SCC Unit: 131 (LHV)
10. Segment Comment: Approximate fuel use rate calculations: (heat input at LHV)/(fuel LHV) = hourly rate (1,935 mmBtu/hr)/(131 mmBtu/mgal) = 14.8 mgal/hour [(1,822 mmBtu/hr)/(131 mmBtu/mgal)] x (750 hr/yr) = 10,431 mgal/yr Approximate fuel use rates are provided for informational purposes only and do not constitute limits. Actual fuel use rates are a function of the fuel heating value and the emission unit operating conditions.		

EMISSIONS UNIT INFORMATION

Section [1] of [4]

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 3 of 3

1. Segment Description (Process/Fuel Type): Simple cycle combustion turbine burning lower sulfur fuel oil (0.0065% sulfur, by weight).		
2. Source Classification Code (SCC): 2-01-001-01		3. SCC Units: Thousand Gallons Burned
4. Maximum Hourly Rate: 14.8 (approx.)	5. Maximum Annual Rate: 13,910 (approx.)	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.0065	8. Maximum % Ash:	9. Million Btu per SCC Unit: 131 (LHV)
10. Segment Comment: Approximate fuel use rate calculations: (heat input at LHV)/(fuel LHV) = hourly rate (1,935 mmBtu/hr)/(131 mmBtu/mgal) = 14.8 mgal/hour [(1,822 mmBtu/hr)/(131 mmBtu/mgal)] x (1,000 hr/yr) = 13,908 mgal/yr Approximate fuel use rates are provided for informational purposes only and do not constitute limits. Actual fuel use rates are a function of the fuel heating value and the emission unit operating conditions.		

Segment Description and Rate: Segment of _____

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: NOX	2. Total Percent Efficiency of Control:
3. Potential Emissions: 338 lb/hour 288.9 tons/year	4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: 0
8. Calculation of Emissions: Hourly NO _x emission rates for simple cycle operation: 2.0 natural gas = 69.3 lb/hr (at ISO conditions) on a 24-hour block average basis Fuel oil = 338 lb/hr @ 20°F Potential annual emissions: 2.0 natural gas = 69.3 lb/hr Fuel oil = 318 lb/hr @ 59°F This permit application requests that the limit on total operation of this unit remain at 4,750 hours per year and the limit on operation with lower sulfur fuel oil (0.0065% sulfur) be set at 1,000 hours per year (compared to the current fuel oil limit of 750 hours per year). Under this scenario, worst-case annual NO _x emissions are with 3,750 hours of operation on 2.0 natural gas and 1,000 hours of operation on the lower sulfur fuel oil. Annual emissions = [(69.3 lb/hr) x (3,750 hr/yr) + (318 lb/hr) x (1,000 hr/yr)] / (2,000 lb/ton) = 288.94 ton/yr	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: The hourly NO _x emissions rate with operation on 2.0 natural gas is from Permit No. 0310485-005-AV and is based on a 24-hour block average as measured by the CEMS. The hourly emissions rate with operation on fuel oil are based on the permitted limit of 42 ppmvd @15% O ₂ on a 3-hour average and are given for informational purposes only and do not constitute limits. The annual potential emissions are given for informational purposes only and do not constitute limits.	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: CO	2. Total Percent Efficiency of Control:
3. Potential Emissions: 65 lb/hour 122.5 tons/year	4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: 0
8. Calculation of Emissions: Hourly CO emission rates for simple cycle operation: 2.0 natural gas = 48.0 lb/hr (at ISO conditions) Fuel oil = 65.0 lb/hr (at ISO conditions) Potential annual emissions: This permit application requests that the limit on total operation of this unit remain at 4,750 hours per year and the limit on operation with lower sulfur fuel oil (0.0065% sulfur) be set at 1,000 hour per year (compared to the current fuel oil limit of 750 hours per year). Under this scenario, worst-case annual CO emissions are with 3,750 hours of operation on 2.0 natural gas and 1,000 hours of operation on the lower sulfur fuel oil. Annual emissions = [(48 lb/hr) x (3,750 hr/yr) + (65 lb/hr) x (1,000 hr/yr)] / (2,000 lb/ton) = 122.50 ton/yr	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: Hourly emission rates are from Permit No. 0310485-005-AV. The potential annual emissions rate is given for informational purposes only and does not constitute a limit.	

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 4

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 15 ppmvd	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: EPA Method 10	
6. Allowable Emissions Comment (Description of Operating Method): Requirement of Permit No. 0310485-005-AV. Applies when firing 2.0 natural gas.	

Allowable Emissions Allowable Emissions 2 of 4

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 48.0 lb/hr (ISO Conditions)	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: EPA Method 10	
6. Allowable Emissions Comment (Description of Operating Method): Requirement of Permit No. 0310485-005-AV. Applies when firing 2.0 natural gas.	

Allowable Emissions Allowable Emissions 3 of 4

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 20 ppmvd	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: EPA Method 10	
6. Allowable Emissions Comment (Description of Operating Method): Requirement of Permit No. 0310485-005-AV. Applies when firing fuel oil.	

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 4 of 4

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 65.0 lb/hr (ISO Conditions)	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: EPA Method 10	
6. Allowable Emissions Comment (Description of Operating Method): Requirement of Permit No. 0310485-005-AV. Applies when firing fuel oil.	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: VOC	2. Total Percent Efficiency of Control:
3. Potential Emissions: 3.0 lb/hour 6.75 tons/year	4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: 5
8. Calculation of Emissions: Hourly VOC emission rates for simple cycle operation: 2.0 natural gas = 3.0 lb/hr @ 20°F and 2.80 @ 59°F Fuel oil = 3.0 lb/hr @ 20°F and 3.0 lb/hr @ 59°F Potential annual emissions: This permit application requests that the limit on total operation of this unit remain at 4,750 hours per year and the limit on operation with lower sulfur fuel oil (0.0065% sulfur) be set at 1,000 hour per year (compared to the current fuel oil limit of 750 hours per year). Under this scenario, worst-case annual VOC emissions are with 3,750 hours of operation on 2.0 natural gas and 1,000 hours of operation on the lower sulfur fuel oil. Annual emissions = [(2.8 lb/hr) x (3,750 hr/yr) + (3 lb/hr) x (1,000 hr/yr)] / (2,000 lb/ton) = 6.75 ton/yr	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: Annual potential emission calculations are based on operation at 100% load and 59°F ambient temperature. The potential hourly and annual emissions are for informational purposes only and do not constitute limits.	

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: SO2	2. Total Percent Efficiency of Control:
3. Potential Emissions: 104.30 lb/hour 58.23 tons/year	4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: 0
<p>8. Calculation of Emissions:</p> <p>Hourly SO₂ emission rates for simple cycle operation: 2.0 natural gas = 11.4 lb/hr @ 20°F and 10.7 lb/hr @ 59°F (2 gr sulfur/100 scf) Fuel oil (0.05% sulfur) = 104.30 lb/hr @ 20°F and 98.21 lb/hr @ 59°F Lower sulfur fuel oil (0.0065% sulfur) = 13.56 lb/hr @ 20°F and 12.77 lb/hr @ 59°F</p> <p>Potential annual emissions: Condition A.9 of Permit No. 0310485-005-AV limits total operation to 4,750 hours per year and operation on fuel oil to 750 hours per year. Therefore, worst-case annual SO₂ emissions are with 4,000 hours of operation on 2.0 natural gas and 750 hours of operation on 0.05% sulfur fuel oil. Note that potential annual SO₂ emissions are less with the proposed lower sulfur fuel oil operating scenario.</p> <p>Annual emissions = [(10.7 lb/hr) x (4,000 hr/yr) + (98.21 lb/hr) x (750 hr/yr)] / (2,000 lb/ton) = 58.23 ton/yr</p>	
<p>9. Pollutant Potential/Estimated Fugitive Emissions Comment: Emission rates are based on permitted and proposed fuel sulfur concentrations. The potential hourly and annual emissions are for informational purposes only and do not constitute limits.</p>	

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 4

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: Use of pipeline grade 2.0 natural gas	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: Custom Fuel Monitoring Schedule	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 4

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.05% sulfur, by weight, in the fuel oil	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: Custom Fuel Monitoring Schedule	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 3 of 4

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.0065% sulfur, by weight, in the lower sulfur fuel oil	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: Custom Fuel Monitoring Schedule	
6. Allowable Emissions Comment (Description of Operating Method): The allowable fuel sulfur level given in Field 3 is the proposed fuel sulfur level for the lower sulfur fuel oil.	

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 4 of 4

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.8% sulfur, by weight, in the fuel oil	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: Custom Fuel Monitoring Schedule	
6. Allowable Emissions Comment (Description of Operating Method): Rule: NSPS 40 CFR 60.334(b) Subpart GG – Standards of Performance for Stationary Gas Turbines	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: PM	2. Total Percent Efficiency of Control:
3. Potential Emissions: 34 lb/hour 50.75 tons/year	4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: 0
8. Calculation of Emissions: Hourly PM emission rates for simple cycle operation: 2.0 natural gas = 18 lb/hr Fuel oil = 34 lb/hr Potential annual emissions: This permit application requests that the limit on total operation of this unit remain at 4,750 hours per year and the limit on operation with lower sulfur fuel oil (0.0065% sulfur) be set at 1,000 hour per year (compared to the current fuel oil limit of 750 hours per year). Under this scenario worst-case annual PM emissions are with 3,750 hours of operation on 2.0 natural gas and 1,000 hours of operation on the lower sulfur fuel oil. Annual emissions = [(18 lb/hr) x (3,750 hr/yr) + (34 lb/hr) x (1,000 hr/yr)] / (2,000 lb/ton) = 50.75 ton/yr	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: Hourly emissions given in Permit No. 0310485-005-AV are 9.0 lb/hr for 2.0 natural gas firing and 17.0 lb/hr for fuel oil firing and are for front half catch only. Total (front and back half catch) emission estimates shown in Fields 3 and 8 above, are based on the assumption that total PM emissions equal twice the front half catch value. The potential emissions shown in fields 5 and 8 are given for informational purposes only and do not constitute limits.	

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 9.0 lb/hr (front half catch only)	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: Use of pipeline grade 2.0 natural gas	
6. Allowable Emissions Comment (Description of Operating Method): The allowable emissions level given in Field 3 applies when firing the emissions unit on 2.0 natural gas. The allowable emissions and method of compliance are from Permit No. 0310485-005-AV.	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 17.0 lb/hr (front half catch only)	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: Use of 0.05% sulfur oil, by weight	
6. Allowable Emissions Comment (Description of Operating Method): The allowable emissions level given in Field 3 applies when firing the emissions unit on 0.05% sulfur, by weight, fuel oil. The allowable emissions and method of compliance are from Permit No. 0310485-005-AV. This limit is also proposed for use when firing the emissions unit on the lower sulfur fuel oil (0.0065%).	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: PM10	2. Total Percent Efficiency of Control:
3. Potential Emissions: 34 lb/hour 50.75 tons/year	4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: 0
8. Calculation of Emissions: Hourly emissions for simple cycle operation (assumes all PM is PM ₁₀): 2.0 natural gas = 18 lb/hr Fuel oil = 34 lb/hr Potential annual emissions: This permit application requests that the limit on total operation of this unit remain at 4,750 hours per year and the limit on operation with lower sulfur fuel oil (0.0065% sulfur) be set at 1,000 hour per year (compared to the current fuel oil limit of 750 hours per year). Under this scenario worst-case annual PM ₁₀ emissions are with 3,750 hours of operation on 2.0 natural gas and 1,000 hours of operation on the lower sulfur fuel oil. Annual emissions = [(18 lb/hr) x (3,750 hr/yr) + (34 lb/hr) x (1,000 hr/yr)] / (2,000 lb/ton) = 50.75 ton/yr	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: It is assumed that all PM emissions are PM ₁₀ . Hourly PM emissions given in Permit No. 0310485-005-AV are 9.0 lb/hr for 2.0 natural gas firing and 17.0 lb/hr for fuel oil firing and are for front half catch only. Total (front and back half catch) emission estimates as shown above are based on the assumption that total PM/PM ₁₀ emissions equals twice the front half catch value. The potential emissions shown in fields 5 and 8 are given for informational purposes only and do not constitute limits.	

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

Section [1] of [4]

G. VISIBLE EMISSIONS INFORMATION

Complete if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: VE10	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: 10% Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: EPA Reference Method 9	
5. Visible Emissions Comment: This visible emissions limit is included in Permit No. 0310485-005-AV. Per Construction Permit No. 0310485-005-AV excess emissions resulting from startup, shutdown, or malfunction are permitted provided that best operational practices are adhered to and the period of excess emissions are minimized.	

Visible Emissions Limitation: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION

Section [1] of [4]

H. CONTINUOUS MONITOR INFORMATION

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor 1 of 4

1. Parameter Code: EM	2. Pollutant(s): NOX
3. CMS Requirement:	<input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: Rule: 62-204.800	

Continuous Monitoring System: Continuous Monitor 2 of 4

1. Parameter Code: O2 or CO2	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

Section [1] of [4]

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

<p>1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)</p> <p><input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. B</u> <input type="checkbox"/> Previously Submitted, Date _____</p>
<p>2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)</p> <p><input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. I</u> <input type="checkbox"/> Previously Submitted, Date _____</p>
<p>3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)</p> <p><input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. J</u> <input type="checkbox"/> Previously Submitted, Date _____</p>
<p>4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)</p> <p><input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. K</u> <input type="checkbox"/> Previously Submitted, Date _____</p> <p><input type="checkbox"/> Not Applicable (construction application)</p>
<p>5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____</p> <p><input checked="" type="checkbox"/> Not Applicable</p>
<p>6. Compliance Demonstration Reports/Records</p> <p><input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____</p> <p><input checked="" type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____</p> <p><input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____</p> <p><input type="checkbox"/> Not Applicable</p> <p>Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.</p>
<p>7. Other Information Required by Rule or Statute</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable</p>

EMISSIONS UNIT INFORMATION

Section [1] of [4]

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. F</u>
2. Compliance Assurance Monitoring <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
3. Alternative Methods of Operation <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. L</u> <input type="checkbox"/> Not Applicable
4. Alternative Modes of Operation (Emissions Trading) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
5. Acid Rain Part Application <input checked="" type="checkbox"/> Certificate of Representation (EPA Form No. 7610-1) <input checked="" type="checkbox"/> Copy Attached, Document ID: <u>Attach. M</u> <input checked="" type="checkbox"/> Acid Rain Part (Form No. 62-210.900(1)(a)) <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. M</u> <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> New Unit Exemption (Form No. 62-210.900(1)(a)2.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Not Applicable

EMISSIONS UNIT INFORMATION

Section [1] of [4]

Additional Requirements Comment

--

EMISSIONS UNIT INFORMATION

Section [2] of [4]

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application - Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION

Section [2] of [4]

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description:

Dry Low-NOx (DLN) Combustor.

Water Injection during fuel oil firing.

Selective Catalytic Reduction (SCR).

2. Control Device or Method Code(s): 024, 028, 065

EMISSIONS UNIT INFORMATION

Section [2] of [4]

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:		
2. Maximum Production Rate:		
3. Maximum Heat Input Rate: 1,911 (HHV) million Btu/hr (2.0 natural gas firing)		
	2,060 (HHV) million Btu/hr (Fuel oil firing)	
Duct Burner	170 (HHV) million Btu/hr (2.0 natural gas firing)	
4. Maximum Incineration Rate: pounds/hr		
	tons/day	
5. Requested Maximum Operating Schedule:		
For 2.0 natural gas firing:	24 hours/day	7 days/week
CT and duct burner	52 weeks/year	8,760 hours/year
For fuel oil firing:	16 hours/day	7 days/week
	52 weeks/year	576 hours/year
Proposed for lower	24 hours/day	7 days/week
sulfur fuel oil firing:	52 weeks/year	2,000 hours/year
6. Operating Capacity/Schedule Comment:		
<p>The heat input rates are a function of operating parameters and ambient conditions. The rates given in Field 3 are from Permit No. PSD-FL-310 and are based on the higher heating value (HHV) of each fuel. The heat input rates are included in the permit only for purposes of determining capacity during performance tests. Continuous compliance with these rates is not required.</p> <p>Under permit number PSD-FL-310, the permitted annual operating rate while firing 0.05% sulfur fuel oil is 576 hours per year for unit 2 and unit 3 combined.</p> <p>The proposed annual operating rate with lower sulfur fuel oil (0.0065% sulfur, by weight) is 2,000 hours per year for Unit 2 and Unit 3 combined with no short-term operational limitations.</p>		

EMISSIONS UNIT INFORMATION

Section [2] of [4]

**C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)****Emission Point Description and Type**

1. Identification of Point on Plot Plan or Flow Diagram: ID #23 on Plot Plan		2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: One 190-foot vertical cylindrical exhaust stack associated with the CT/HRSG			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: N/A			
5. Discharge Type Code: V	6. Stack Height: 190 feet		7. Exit Diameter: 18.0 feet
8. Exit Temperature: 204 °F	9. Actual Volumetric Flow Rate: 1,009,200 acfm	10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: 790,100 dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: 17 East (km): 408.774 North (km): 3354.531		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment: Exit temperature and flow rate are for operation of the combustion turbine on 2.0 natural gas with the duct burner in operation and at an ambient temperature of 59°F and operation at 100% load.			

EMISSIONS UNIT INFORMATION

Section [2] of [4]

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 3

1. Segment Description (Process/Fuel Type): Combustion turbine operating in combined cycle mode on 2.0 natural gas. This unit is allowed to operate on 2.0 natural gas for the entire year (i.e. 8,760 hours per year).		
2. Source Classification Code (SCC): 2-01-002-01	3. SCC Units: Million Cubic Feet Burned	
4. Maximum Hourly Rate: 1.98 (approx.)	5. Maximum Annual Rate: 16,200 (approx.)	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: 965 (HHV)
10. Segment Comment: Approximate fuel use rate calculations: (heat input at HHV)/(fuel HHV) = hourly rate (1,910 mmBtu/hr)/(965 million scf/mmBtu) = 1.98 million scf/hour [(1,785 mmBtu/hr)/(965 million scf/mmBtu)]x(8,760 hr/yr) = 16,203 million scf/yr Approximate fuel use rates are provided for informational purposes only and do not constitute limits. Actual fuel use rates are a function of the fuel heating value and the emission unit operating conditions.		

Segment Description and Rate: Segment 2 of 3

1. Segment Description (Process/Fuel Type): Combustion turbine operating in combined cycle mode on No. 2 distillate fuel oil. The maximum allowable hours of fuel oil firing for Unit 2 and Unit 3 combined is 576 hours per consecutive 12-month period (Permit No. PSD-FL-310).		
2. Source Classification Code (SCC): 2-01-001-01	3. SCC Units: Thousand Gallons Burned	
4. Maximum Hourly Rate: 14.8 (approx.)	5. Maximum Annual Rate: 8,040 (approx.)	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.05	8. Maximum % Ash:	9. Million Btu per SCC Unit: 139 (HHV)
10. Segment Comment: Approximate fuel use rate calculations: (heat input at HHV)/(fuel HHV) = hourly rate (2,059 mmBtu/hr)/(139 mgal/mmBtu) = 14.81 kgal/hour [(1,939 mmBtu/hr)/(139 mgal/mmBtu)]x(576 hr/yr) = 8,035 kgal/yr The maximum annual rate is based on the assumption that combined Unit 2 and Unit 3 maximum allowable hours of fuel oil firing are all used in Unit 2. Actual fuel use rates are a function of the fuel heating value and the emission unit operating conditions. Approximate fuel use rates are provided for informational purposes only and do not constitute limits.		

EMISSIONS UNIT INFORMATION

Section [2] of [4]

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 3 of 3

1. Segment Description (Process/Fuel Type): Combustion turbine operating in combined cycle mode on lower sulfur fuel oil (0.0065% sulfur, by weight). The proposed maximum allowable hours of lower sulfur fuel oil firing for Unit 2 and Unit 3 combined is 2,000 hours per consecutive 12-month period.		
2. Source Classification Code (SCC): 2-01-001-01		3. SCC Units: Thousand Gallons Burned
4. Maximum Hourly Rate: 14.8 (approx.)	5. Maximum Annual Rate: 27,900 (approx.)	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.0065	8. Maximum % Ash:	9. Million Btu per SCC Unit: 139
10. Segment Comment: Approximate fuel use rate calculations: (heat input at HHV)/(fuel HHV) = hourly rate (2,059 mmBtu/hr)/(139 mgal/mmBtu) = 14.81 kgal/hour [(1,939 mmBtu/hr)/(139 mgal/mmBtu)]x(2,000 hr/yr) = 27,899 kgal/yr The maximum annual rate is based on the assumption that combined Unit 2 and Unit 3 maximum allowable hours of fuel oil firing are all used in Unit 2. Actual fuel use rates are a function of the fuel heating value and the emission unit operating conditions. Approximate fuel use rates are provided for informational purposes only and do not constitute limits.		

Segment Description and Rate: Segment 4 of 4

1. Segment Description (Process/Fuel Type): Duct burner operating on 2.0 natural gas.		
2. Source Classification Code (SCC):		3. SCC Units: Million Cubic Feet Burned
4. Maximum Hourly Rate: 0.18 (approx.)	5. Maximum Annual Rate: 1,540 (approx.)	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: 965 (HHV)
10. Segment Comment: Approximate fuel use rate calculations: (heat input at HHV)/(fuel HHV) = hourly rate Maximum hourly rate = (170 mmBtu/hr)/(965 mmBtu/mmscf) = 0.176 mmscf/hr Maximum annual rate = (0.176 mmscf/hr) x (8,760 hr/yr) = 1,543 mmscf/yr Fuel use rates are a function of operating conditions. Approximate fuel use rates are provided for informational purposes only and do not constitute limits.		

EMISSIONS UNIT INFORMATION

Section [2] of [4]

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
NOX	065	024, 028	EL
CO			EL
VOC			EL
SO2			EL
PM			EL
PM10			EL

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: NOX	2. Total Percent Efficiency of Control:
3. Potential Emissions: 119.37 lb/hour 149.01 tons/year	4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: 5
8. Calculation of Emissions: Highest hourly emissions for combined cycle operation: 2.0 natural gas = 24.95 lb/hr @ 20°F (w/out duct burner) and 23.92 @ 59°F (with duct burner) Fuel oil = 119.37 lb/hr max @ 20°F and 112.41 lb/hr @ 59°F (w/out duct burner) Potential annual emissions: Potential annual emissions are based on operation at 100% load and 59°F and proposed maximum allowable hours of lower sulfur fuel oil (0.0065% sulfur) firing for Unit 2 and Unit 3 combined of 2,000 hours per consecutive 12-month period. For this calculation, it is assumed that these hours of operation are evenly split between Unit 2 and Unit 3. Therefore, worst-case annual NOx emissions are with 1,000 hours of operation on the lower sulfur fuel oil and 7,760 hours of operation on 2.0 natural gas. Annual emissions = [(23.92 lb/hr) x (7,760 hr/yr) + (112.41 lb/hr) x (1,000 hr/yr)] / (2,000 lb/ton) = 149.01 ton/yr	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: The potential hourly and annual emissions are for informational purposes only and do not constitute limits. If all of the proposed allowable hours of fuel oil firing were used in Unit 2, the annual potential emissions would be greater than shown. However, the annual potential emissions for Unit 3 would then decrease by an equal amount.	

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 3.5 ppmvd @15% O ₂ on a 3-hour block avg	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: CEMS	
6. Allowable Emissions Comment (Description of Operating Method): The allowable emissions level in Field 3 applies when firing 2.0 natural gas. The allowable emissions level is BACT and is found in Permit No. PSD-FL-310.	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 15.0 ppmvd @15% O ₂ on a 3-hour block average	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: CEMS	
6. Allowable Emissions Comment (Description of Operating Method): The allowable emissions level in Field 3 applies when firing fuel oil. The allowable emissions level is BACT and is found in Permit No. PSD-FL-310.	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: CO	2. Total Percent Efficiency of Control:
3. Potential Emissions: 72.43 lb/hour 246.83 tons/year	4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: 5
<p>8. Calculation of Emissions:</p> <p>Highest hourly emissions for combined cycle operation: 2.0 natural gas = 62.57 lb/hr @ 95°F and 54.87 lb/hr @ 59°F (with duct burner) Fuel oil = 72.43 lb/hr @ 20°F and 67.86 lb/hr @ 59°F (w/out duct burner)</p> <p>Potential annual emissions: Potential annual emissions are based on operation at 100% load and 59°F and proposed maximum allowable hours of lower sulfur fuel oil (0.0065% sulfur) firing for Unit 2 and Unit 3 combined of 2,000 hours per consecutive 12-month period. For this calculation, it is assumed that these hours of operation are evenly split between Unit 2 and Unit 3. Therefore, worst-case annual CO emissions are with 1,000 hours of operation on the lower sulfur fuel oil and 7,760 hours of operation on 2.0 natural gas. $\text{Annual emissions} = [(54.87 \text{ lb/hr}) \times (7,760 \text{ hr/yr}) + (67.86 \text{ lb/hr}) \times (1,000 \text{ hr/yr})] / (2,000 \text{ lb/ton}) = 246.83 \text{ ton/yr}$</p>	
<p>9. Pollutant Potential/Estimated Fugitive Emissions Comment:</p> <p>The potential hourly and annual emissions are for informational purposes only and do not constitute limits. If all of the proposed allowable hours of fuel oil firing were used in Unit 2, the annual potential emissions would be greater than shown. However, the annual potential emissions for Unit 3 would then decrease by an equal amount.</p>	

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 14 ppmvd @15% O ₂ on a 24-hour block average	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: CEMS	
6. Allowable Emissions Comment (Description of Operating Method): The allowable emissions level in Field 3 applies when firing 2.0 natural gas or fuel oil. The allowable emissions level is BACT and is found in Permit No. PSD-FL-310.	

Allowable Emissions Allowable Emissions of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: PM/PM10	2. Total Percent Efficiency of Control:
3. Potential Emissions: 62.1 lb/hour 108.81 tons/year	4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
<p>8. Calculation of Emissions: Highest hourly emissions for combined cycle operation: 2.0 natural gas = 22.02 lb/hr @ 95°F and 20.04 lb/hr @ 59°F (with duct burner) Fuel oil = 62.1 lb/hr (w/out duct burner) Potential annual emissions: Potential annual emissions are based on operation at 100% load and 59°F and proposed maximum allowable hours of lower sulfur fuel oil (0.0065% sulfur) firing for Unit 2 and Unit 3 combined of 2,000 hours per consecutive 12-month period. For this calculation, it is assumed that these hours of operation are evenly split between Unit 2 and Unit 3. Therefore, worst-case annual PM/PM₁₀ emissions are with 1,000 hours of operation on the lower sulfur fuel oil and 7,760 hours of operation on 2.0 natural gas. Annual emissions = [(20.04 lb/hr) x (7,760 hr/yr) + (62.1 lb/hr) x (1,000 hr/yr)] / (2,000 lb/ton) = 108.81 ton/yr</p>	
<p>9. Pollutant Potential/Estimated Fugitive Emissions Comment: The potential annual emissions are for informational purposes only and do not constitute limits. If all of the proposed allowable hours of fuel oil firing were used in Unit 2, the annual potential emissions would be greater than shown. However, the annual potential emissions for Unit 3 would then decrease by an equal amount.</p>	

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 22.02 lb/hr	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: Compliance demonstrated by opacity	
6. Allowable Emissions Comment (Description of Operating Method): The allowable emissions rate in Field 3 applies when firing 2.0 natural gas. The allowable emissions level is BACT and is found in Permit No. PSD-FL-310.	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 62.1 lb/hr	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: Compliance demonstrated by opacity	
6. Allowable Emissions Comment (Description of Operating Method): The allowable emissions rate in Field 3 applies when firing fuel oil. The allowable emissions level is BACT and is found in Permit No. PSD-FL-310.	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: SO ₂	2. Total Percent Efficiency of Control:
3. Potential Emissions: 109.35 lb/hour 64.39 tons/year	4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
<p>8. Calculation of Emissions: Highest hourly emissions for combined cycle operation: 2.0 natural gas (2 grains sulfur per 100 scf) = 12.2 lb/hr @ 20°F (w/out duct burner) and 11.70 lb/hr @ 59°F (with duct burner) Fuel oil (0.05% sulfur) = 109.35 lb/hr @ 20°F and 102.97 lb/hr @ 59°F (w/out duct burner) Lower sulfur fuel oil (0.0065% sulfur) = 14.22 lb/hr @ 20°F and 13.39 @ 59°F Potential annual emissions: Worst case potential annual emissions are based on operation at 100% load and 59°F and the maximum allowable hours of 0.05% sulfur fuel oil firing for Unit 2 and Unit 3 combined of 576 hours per consecutive 12-month period. It is assumed that these hours of operation are evenly split between Unit 2 and Unit 3. Therefore, worst-case annual SO₂ emissions are with 288 hours of operation on 0.05% sulfur fuel oil and 8,472 hours of operation on 2.0 natural gas. Note that potential annual SO₂ emissions are less with the proposed lower sulfur fuel oil (0.0065% sulfur) operating scenario. Annual emissions = [(11.70 lb/hr) x (8,472 hr/yr) + (102.97 lb/hr) x (288 hr/yr)] / (2,000 lb/ton) =</p>	
<p>9. Pollutant Potential/Estimated Fugitive Emissions Comment: The potential hourly and annual emissions are for informational purposes only and do not constitute limits. If all of the allowable hours of fuel oil firing were used in Unit 2, the annual potential emissions would be greater than shown. However, the annual potential emissions for Unit 3 would then decrease by an equal amount.</p>	

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 4

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: Use of pipeline 2.0 natural gas (2 grains sulfur per 100 standard cubic feet natural gas)	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: Custom Fuel Monitoring Schedule	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 4

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.05% sulfur, by weight, in the fuel oil	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: Custom Fuel Monitoring Schedule	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 3 of 4

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.0065% sulfur, by weight, in the lower sulfur fuel oil	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: Custom Fuel Monitoring Schedule	
6. Allowable Emissions Comment (Description of Operating Method): The allowable fuel sulfur level given in Field 3 is the proposed fuel sulfur level for the lower sulfur fuel oil.	

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 4 of 4

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.8% sulfur, by weight, in the fuel oil	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: Custom Fuel Monitoring Schedule	
6. Allowable Emissions Comment (Description of Operating Method): Rule: NSPS 40 CFR 60.334(b) Subpart GG – Standards of Performance for Stationary Gas Turbines	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: VOC	2. Total Percent Efficiency of Control:
3. Potential Emissions: 7.68 lb/hour 19.55 tons/year	4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
<p>8. Calculation of Emissions:</p> <p>Highest hourly emissions for combined cycle operation: 2.0 natural gas = 6.81 lb/hr @ 95°F and 4.05 lb/hr @ 59°F (with duct burner) Fuel oil = 7.68 lb/hr @ 59°F (w/out duct burner) (permit limit) Potential annual emissions: Potential annual emissions are based on a proposed maximum allowable hours of fuel oil firing for Unit 2 and Unit 3 combined with lower sulfur fuel oil (0.0065% sulfur) of 2,000 hours per consecutive 12-month period with these hours of operation evenly split between Unit 2 and Unit 3. Therefore, worst-case annual VOC emissions are with 1,000 hours of operation on the lower sulfur fuel oil and 7,760 hours of operation on 2.0 natural gas. Annual emissions = [(4.05 lb/hr) x (7,760 hr/yr) + (7.68 lb/hr) x (1,000 hr/yr)] / (2,000 lb/ton) = 19.55 ton/yr</p>	
<p>9. Pollutant Potential/Estimated Fugitive Emissions Comment:</p> <p>The potential annual emissions are for informational purposes only and do not constitute limits. If all of the proposed allowable hours of fuel oil firing were used in Unit 2, the annual potential emissions would be greater than shown. However, the annual potential emissions for Unit 3 would then decrease by an equal amount.</p>	

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 6.81 lb/hr	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: EPA Method 18, 25 or 25A	
6. Allowable Emissions Comment (Description of Operating Method): The allowable emissions rate in Field 3 applies when firing 2.0 natural gas. The allowable emissions level is found in Permit No. PSD-FL-310.	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 7.68 lb/hr	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: EPA Method 18, 25 or 25A	
6. Allowable Emissions Comment (Description of Operating Method): The allowable emissions rate in Field 3 applies when firing fuel oil. The allowable emissions level is found in Permit No. PSD-FL-310.	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

Section [2] of [4]

G. VISIBLE EMISSIONS INFORMATION

Complete if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: VE10	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: 10 % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: EPA Method 9	
5. Visible Emissions Comment: This visible emissions limit is included in Permit No. 0310485-005-AV. Per Construction Permit No. 0310485-005-AV excess emissions resulting from startup, shutdown, or malfunction are permitted provided that best operational practices are adhered to and the period of excess emissions are minimized.	

Visible Emissions Limitation: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION

Section [2] of [4]

H. CONTINUOUS MONITOR INFORMATION

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor 1 of 3

1. Parameter Code: EM	2. Pollutant(s): NOX
3. CMS Requirement:	<input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: Rule: 40 CFR 60 and 40 CFR Part 75. Use of CEMS is required by Construction Permit No. PSD-FL-310.	

Continuous Monitoring System: Continuous Monitor 2 of 3

1. Parameter Code: EM	2. Pollutant(s): CO
3. CMS Requirement:	<input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: Use of CEMS is required by Construction Permit No. PSD-FL-310.	

EMISSIONS UNIT INFORMATION

Section [2] of [4]

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor 3 of 3

1. Parameter Code: CO2	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: Use of CEMS is required by Construction Permit No. PSD-FL-310.	

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

Section [2] of [4]

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. B</u> <input type="checkbox"/> Previously Submitted, Date _____
2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. I</u> <input type="checkbox"/> Previously Submitted, Date _____
3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. J</u> <input type="checkbox"/> Previously Submitted, Date _____
4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. K</u> <input type="checkbox"/> Previously Submitted, Date _____ <input type="checkbox"/> Not Applicable (construction application)
5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable
6. Compliance Demonstration Reports/Records <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Not Applicable Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.
7. Other Information Required by Rule or Statute <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

EMISSIONS UNIT INFORMATION

Section [2] of [4]

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. F</u>
2. Compliance Assurance Monitoring <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
3. Alternative Methods of Operation <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. L</u> <input type="checkbox"/> Not Applicable
4. Alternative Modes of Operation (Emissions Trading) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
5. Acid Rain Part Application <input checked="" type="checkbox"/> Certificate of Representation (EPA Form No. 7610-1) <input checked="" type="checkbox"/> Copy Attached, Document ID: <u>Attach. M</u> <input checked="" type="checkbox"/> Acid Rain Part (Form No. 62-210.900(1)(a)) <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. M</u> <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> New Unit Exemption (Form No. 62-210.900(1)(a)2.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Not Applicable

EMISSIONS UNIT INFORMATION

Section [2] of [4]

Additional Requirements Comment

--

EMISSIONS UNIT INFORMATION

Section [3] of [4]

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application - Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION

Section [3] of [4]

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description:

Dry Low-NOx (DLN) Combustor.

Water Injection during fuel oil firing.

Selective Catalytic Reduction (SCR).

2. Control Device or Method Code(s): 024, 028, 065

EMISSIONS UNIT INFORMATION

Section [3] of [4]

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:		
2. Maximum Production Rate:		
3. Maximum Heat Input Rate: 1,911 (HHV) million Btu/hr (2.0 natural gas firing)		
	2,060 (HHV) million Btu/hr (Fuel oil firing)	
Duct Burner	170 (HHV) million Btu/hr (2.0 natural gas firing)	
4. Maximum Incineration Rate: pounds/hr		
	tons/day	
5. Requested Maximum Operating Schedule:		
For 2.0 natural gas firing:	24 hours/day	7 days/week
CT and duct burner	52 weeks/year	8,760 hours/year
For fuel oil firing:	16 hours/day	7 days/week
	52 weeks/year	576 hours/year
Proposed for lower	24 hours/day	7 days/week
sulfur fuel oil firing:	52 weeks/year	2,000 hours/year
6. Operating Capacity/Schedule Comment:		
<p>The heat input rates are a function of operating parameters and ambient conditions. The rates given in Field 3 are from Permit No. PSD-FL-310 and are based on the higher heating value (HHV) of each fuel. The heat input rates are included in the permit only for purposes of determining capacity during performance tests. Continuous compliance with these rates is not required.</p> <p>Under permit number PSD-FL-310, the permitted annual operating rate while firing 0.05% sulfur fuel oil is 576 hours per year for unit 2 and unit 3 combined.</p> <p>The proposed annual operating rate with lower sulfur fuel oil (0.0065% sulfur, by weight) is 2,000 hours per year for Unit 2 and Unit 3 combined with no short-term operational limitations.</p>		

EMISSIONS UNIT INFORMATION

Section [3] of [4]

**C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)****Emission Point Description and Type**

1. Identification of Point on Plot Plan or Flow Diagram: ID #23 on Plot Plan		2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: One 190-foot vertical cylindrical exhaust stack associated with the CT/HRSG			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: N/A			
5. Discharge Type Code: V	6. Stack Height: 190 feet	7. Exit Diameter: 18.0 feet	
8. Exit Temperature: 204 °F	9. Actual Volumetric Flow Rate: 1,009,200 acfm	10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: 790,100 dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: 17 East (km): 408.774 North (km): 3354.531		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment: Exit temperature and flow rate are for operation of the combustion turbine on 2.0 natural gas with the duct burner in operation and at an ambient temperature of 59°F and operation at 100% load.			

EMISSIONS UNIT INFORMATION

Section [3] of [4]

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 3

1. Segment Description (Process/Fuel Type): Combustion turbine operating in combined cycle mode on 2.0 natural gas. This unit is allowed to operate on 2.0 natural gas for the entire year (i.e. 8,760 hours per year).		
2. Source Classification Code (SCC): 2-01-002-01	3. SCC Units: Million Cubic Feet Burned	
4. Maximum Hourly Rate: 1.98 (approx.)	5. Maximum Annual Rate: 16,200 (approx.)	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: 965 (HHV)
10. Segment Comment: Approximate fuel use rate calculations: (heat input at HHV)/(fuel HHV) = hourly rate (1,910 mmBtu/hr)/(965 million scf/mmBtu) = 1.98 million scf/hour [(1,785 mmBtu/hr)/(965 million scf/mmBtu)]x(8,760 hr/yr) = 16,203 million scf/yr Approximate fuel use rates are provided for informational purposes only and do not constitute limits. Actual fuel use rates are a function of the fuel heating value and the emission unit operating conditions.		

Segment Description and Rate: Segment 2 of 3

1. Segment Description (Process/Fuel Type): Combustion turbine operating in combined cycle mode on No. 2 distillate fuel oil. The maximum allowable hours of fuel oil firing for Unit 2 and Unit 3 combined is 576 hours per consecutive 12-month period (Permit No. PSD-FL-310).		
2. Source Classification Code (SCC): 2-01-001-01	3. SCC Units: Thousand Gallons Burned	
4. Maximum Hourly Rate: 14.8 (approx.)	5. Maximum Annual Rate: 8,040 (approx.)	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.05	8. Maximum % Ash:	9. Million Btu per SCC Unit: 139 (HHV)
10. Segment Comment: Approximate fuel use rate calculations: (heat input at HHV)/(fuel HHV) = hourly rate (2,059 mmBtu/hr)/(139 mgal/mmBtu) = 14.81 kgal/hour [(1,939 mmBtu/hr)/(139 mgal/mmBtu)]x(576 hr/yr) = 8,035 kgal/yr The maximum annual rate is based on the assumption that combined Unit 2 and Unit 3 maximum allowable hours of fuel oil firing are all used in Unit 3. Actual fuel use rates are a function of the fuel heating value and the emission unit operating conditions. Approximate fuel use rates are provided for informational purposes only and do not constitute limits.		

EMISSIONS UNIT INFORMATION

Section [3] of [4]

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 3 of 3

1. Segment Description (Process/Fuel Type): Combustion turbine operating in combined cycle mode on lower sulfur fuel oil (0.0065% sulfur, by weight). The proposed maximum allowable hours of lower sulfur fuel oil firing for Unit 2 and Unit 3 combined is 2,000 hours per consecutive 12-month period.		
2. Source Classification Code (SCC): 2-01-001-01		3. SCC Units: Thousand Gallons Burned
4. Maximum Hourly Rate: 14.8 (approx.)	5. Maximum Annual Rate: 27,900 (approx.)	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.0065	8. Maximum % Ash:	9. Million Btu per SCC Unit: 139
10. Segment Comment: Approximate fuel use rate calculations: (heat input at HHV)/(fuel HHV) = hourly rate (2,059 mmBtu/hr)/(139 mgal/mmBtu) = 14.81 kgal/hour [(1,939 mmBtu/hr)/(139 mgal/mmBtu)]x(2,000 hr/yr) = 27,899 kgal/yr The maximum annual rate is based on the assumption that combined Unit 2 and Unit 3 maximum allowable hours of fuel oil firing are all used in Unit 3. Actual fuel use rates are a function of the fuel heating value and the emission unit operating conditions. Approximate fuel use rates are provided for informational purposes only and do not constitute limits.		

Segment Description and Rate: Segment 4 of 4

1. Segment Description (Process/Fuel Type): Duct burner operating on 2.0 natural gas.		
2. Source Classification Code (SCC):		3. SCC Units: Million Cubic Feet Burned
4. Maximum Hourly Rate: 0.18 (approx.)	5. Maximum Annual Rate: 1,540 (approx.)	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: 965 (HHV)
10. Segment Comment: Approximate fuel use rate calculations: (heat input at HHV)/(fuel HHV) = hourly rate Maximum hourly rate = (170 mmBtu/hr)/(965 mmBtu/mmscf) = 0.176 mmscf/hr Maximum annual rate = (0.176 mmscf/hr) x (8,760 hr/yr) = 1,543 mmscf/yr Fuel use rates are a function of operating conditions. Approximate fuel use rates are provided for informational purposes only and do not constitute limits.		

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 3.5 ppmvd @15% O ₂ on a 3-hour block avg	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: CEMS	
6. Allowable Emissions Comment (Description of Operating Method): The allowable emissions level in Field 3 applies when firing 2.0 natural gas. The allowable emissions level is BACT and is found in Permit No. PSD-FL-310.	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 15.0 ppmvd @15% O ₂ on a 3-hour block average	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: CEMS	
6. Allowable Emissions Comment (Description of Operating Method): The allowable emissions level in Field 3 applies when firing fuel oil. The allowable emissions level is BACT and is found in Permit No. PSD-FL-310.	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: CO	2. Total Percent Efficiency of Control:
3. Potential Emissions: 72.43 lb/hour 246.83 tons/year	4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: 5
8. Calculation of Emissions: Highest hourly emissions for combined cycle operation: 2.0 natural gas = 62.57 lb/hr @ 95°F and 54.87 lb/hr @ 59°F (with duct burner) Fuel oil = 72.43 lb/hr @ 20°F and 67.86 lb/hr @ 59°F (w/out duct burner) Potential annual emissions: Potential annual emissions are based on operation at 100% load and 59°F and proposed maximum allowable hours of lower sulfur fuel oil (0.0065% sulfur) firing for Unit 2 and Unit 3 combined of 2,000 hours per consecutive 12-month period. For this calculation, it is assumed that these hours of operation are evenly split between Unit 2 and Unit 3. Therefore, worst-case annual CO emissions are with 1,000 hours of operation on the lower sulfur fuel oil and 7,760 hours of operation on 2.0 natural gas. Annual emissions = [(54.87 lb/hr) x (7,760 hr/yr) + (67.86 lb/hr) x (1,000 hr/yr)] / (2,000 lb/ton) = 246.83 ton/yr	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: The potential hourly and annual emissions are for informational purposes only and do not constitute limits. If all of the proposed allowable hours of fuel oil firing were used in Unit 3, the annual potential emissions would be greater than shown. However, the annual potential emissions for Unit 2 would then decrease by an equal amount.	

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 14 ppmvd @15% O ₂ on a 24-hour block average	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: CEMS	
6. Allowable Emissions Comment (Description of Operating Method): The allowable emissions level in Field 3 applies when firing 2.0 natural gas or fuel oil. The allowable emissions level is BACT and is found in Permit No. PSD-FL-310.	

Allowable Emissions Allowable Emissions of

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: PM/PM10	2. Total Percent Efficiency of Control:
3. Potential Emissions: 62.1 lb/hour 108.81 tons/year	4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions: Highest hourly emissions for combined cycle operation: 2.0 natural gas = 22.02 lb/hr @ 95°F and 20.04 lb/hr @ 59°F (with duct burner) Fuel oil = 62.1 lb/hr (w/out duct burner) Potential annual emissions: Potential annual emissions are based on operation at 100% load and 59°F and proposed maximum allowable hours of lower sulfur fuel oil (0.0065% sulfur) firing for Unit 2 and Unit 3 combined of 2,000 hours per consecutive 12-month period. For this calculation, it is assumed that these hours of operation are evenly split between Unit 2 and Unit 3. Therefore, worst-case annual PM/PM ₁₀ emissions are with 1,000 hours of operation on the lower sulfur fuel oil and 7,760 hours of operation on 2.0 natural gas. Annual emissions = [(20.04 lb/hr) x (7,760 hr/yr) + (62.1 lb/hr) x (1,000 hr/yr)] / (2,000 lb/ton) = 108.81 ton/yr	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: The potential annual emissions are for informational purposes only and do not constitute limits. If all of the proposed allowable hours of fuel oil firing were used in Unit 3, the annual potential emissions would be greater than shown. However, the annual potential emissions for Unit 2 would then decrease by an equal amount.	

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 22.02 lb/hr	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: Compliance demonstrated by opacity	
6. Allowable Emissions Comment (Description of Operating Method): The allowable emissions rate in Field 3 applies when firing 2.0 natural gas. The allowable emissions level is BACT and is found in Permit No. PSD-FL-310.	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 62.1 lb/hr	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: Compliance demonstrated by opacity	
6. Allowable Emissions Comment (Description of Operating Method): The allowable emissions rate in Field 3 applies when firing fuel oil. The allowable emissions level is BACT and is found in Permit No. PSD-FL-310.	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: SO2	2. Total Percent Efficiency of Control:
3. Potential Emissions: 109.35 lb/hour 64.39 tons/year	4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
<p>8. Calculation of Emissions: Highest hourly emissions for combined cycle operation: 2.0 natural gas (2 grains sulfur per 100 scf) = 12.2 lb/hr @ 20°F (w/out duct burner) and 11.70 lb/hr @ 59°F (with duct burner) Fuel oil (0.05% sulfur) = 109.35 lb/hr @ 20°F and 102.97 lb/hr @ 59°F (w/out duct burner) Lower sulfur fuel oil (0.0065% sulfur) = 14.22 lb/hr @ 20°F and 13.39 @ 59°F Potential annual emissions: Worst case potential annual emissions are based on operation at 100% load and 59°F and the maximum allowable hours of 0.05% sulfur fuel oil firing for Unit 2 and Unit 3 combined of 576 hours per consecutive 12-month period. It is assumed that these hours of operation are evenly split between Unit 2 and Unit 3. Therefore, worst-case annual SO₂ emissions are with 288 hours of operation on 0.05% sulfur fuel oil and 8,472 hours of operation on 2.0 natural gas. Note that potential annual SO₂ emissions are less with the proposed lower sulfur fuel oil (0.0065% sulfur) operating scenario. Annual emissions = [(11.70 lb/hr) x (8,472 hr/yr) + (102.97 lb/hr) x (288 hr/yr)] / (2,000 lb/ton) =</p>	
<p>9. Pollutant Potential/Estimated Fugitive Emissions Comment: The potential hourly and annual emissions are for informational purposes only and do not constitute limits. If all of the allowable hours of fuel oil firing were used in Unit 3, the annual potential emissions would be greater than shown. However, the annual potential emissions for Unit 2 would then decrease by an equal amount.</p>	

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 4

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: Use of pipeline 2.0 natural gas (2 grains sulfur per 100 standard cubic feet natural gas)	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: Custom Fuel Monitoring Schedule	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 4

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.05% sulfur, by weight, in the fuel oil	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: Custom Fuel Monitoring Schedule	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 3 of 4

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.0065% sulfur, by weight, in the lower sulfur fuel oil	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: Custom Fuel Monitoring Schedule	
6. Allowable Emissions Comment (Description of Operating Method): The allowable fuel sulfur level given in Field 3 is the proposed fuel sulfur level for the lower sulfur fuel oil.	

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 4 of 4

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.8% sulfur, by weight, in the fuel oil	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: Custom Fuel Monitoring Schedule	
6. Allowable Emissions Comment (Description of Operating Method): Rule: NSPS 40 CFR 60.334(b) Subpart GG – Standards of Performance for Stationary Gas Turbines	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: VOC	2. Total Percent Efficiency of Control:
3. Potential Emissions: 7.68 lb/hour 19.55 tons/year	4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions: Highest hourly emissions for combined cycle operation: 2.0 natural gas = 6.81 lb/hr @ 95°F and 4.05 lb/hr @ 59°F (with duct burner) Fuel oil = 7.68 lb/hr @ 59°F (w/out duct burner) (permit limit) Potential annual emissions: Potential annual emissions are based on a proposed maximum allowable hours of fuel oil firing for Unit 2 and Unit 3 combined with lower sulfur fuel oil (0.0065% sulfur) of 2,000 hours per consecutive 12-month period with these hours of operation evenly split between Unit 2 and Unit 3. Therefore, worst-case annual VOC emissions are with 1,000 hours of operation on the lower sulfur fuel oil and 7,760 hours of operation on 2.0 natural gas. Annual emissions = [(4.05 lb/hr) x (7,760 hr/yr) + (7.68 lb/hr) x (1,000 hr/yr)] / (2,000 lb/ton) = 19.55 ton/yr	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: The potential annual emissions are for informational purposes only and do not constitute limits. If all of the proposed allowable hours of fuel oil firing were used in Unit 3, the annual potential emissions would be greater than shown. However, the annual potential emissions for Unit 2 would than decrease by an equal amount.	

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 6.81 lb/hr	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: EPA Method 18, 25 or 25A	
6. Allowable Emissions Comment (Description of Operating Method): The allowable emissions rate in Field 3 applies when firing 2.0 natural gas. The allowable emissions level is found in Permit No. PSD-FL-310.	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 7.68 lb/hr	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: EPA Method 18, 25 or 25A	
6. Allowable Emissions Comment (Description of Operating Method): The allowable emissions rate in Field 3 applies when firing fuel oil. The allowable emissions level is found in Permit No. PSD-FL-310.	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

Section [3] of [4]

G. VISIBLE EMISSIONS INFORMATION

Complete if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: VE10	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: 10 % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: EPA Method 9	
5. Visible Emissions Comment: This visible emissions limit is included in Permit No. 0310485-005-AV. Per Construction Permit No. 0310485-005-AV excess emissions resulting from startup, shutdown, or malfunction are permitted provided that best operational practices are adhered to and the period of excess emissions are minimized.	

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION

Section [3] of [4]

H. CONTINUOUS MONITOR INFORMATION**Complete if this emissions unit is or would be subject to continuous monitoring.****Continuous Monitoring System:** Continuous Monitor 1 of 3

1. Parameter Code: EM	2. Pollutant(s): NOX
3. CMS Requirement:	<input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: Rule: 40 CFR 60 and 40 CFR Part 75. Use of CEMS is required by Construction Permit No. PSD-FL-310.	

Continuous Monitoring System: Continuous Monitor 2 of 3

1. Parameter Code: EM	2. Pollutant(s): CO
3. CMS Requirement:	<input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: Use of CEMS is required by Construction Permit No. PSD-FL-310.	

EMISSIONS UNIT INFORMATION

Section [3] of [4]

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor 3 of 3

1. Parameter Code: CO2	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: Use of CEMS is required by Construction Permit No. PSD-FL-310.	

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

Section [3] of [4]

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

<p>1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. B</u> <input type="checkbox"/> Previously Submitted, Date _____</p>
<p>2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. I</u> <input type="checkbox"/> Previously Submitted, Date _____</p>
<p>3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. J</u> <input type="checkbox"/> Previously Submitted, Date _____</p>
<p>4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. K</u> <input type="checkbox"/> Previously Submitted, Date _____ <input type="checkbox"/> Not Applicable (construction application)</p>
<p>5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable</p>
<p>6. Compliance Demonstration Reports/Records <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Not Applicable</p> <p>Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.</p>
<p>7. Other Information Required by Rule or Statute <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable</p>

EMISSIONS UNIT INFORMATION

Section [3] of [4]

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. F</u>
2. Compliance Assurance Monitoring <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
3. Alternative Methods of Operation <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. L</u> <input type="checkbox"/> Not Applicable
4. Alternative Modes of Operation (Emissions Trading) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
5. Acid Rain Part Application <input checked="" type="checkbox"/> Certificate of Representation (EPA Form No. 7610-1) <input checked="" type="checkbox"/> Copy Attached, Document ID: <u>Attach. M</u> <input checked="" type="checkbox"/> Acid Rain Part (Form No. 62-210.900(1)(a)) <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach. M</u> <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> New Unit Exemption (Form No. 62-210.900(1)(a)2.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Not Applicable

EMISSIONS UNIT INFORMATION

Section [3] of [4]

Additional Requirements Comment

--

EMISSIONS UNIT INFORMATION

Section [4] of [4]

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application - Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION

Section [4] of [4]

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section: Mechanical Draft Cooling Tower

3. Emissions Unit Identification Number: 007

4. Emissions Unit Status Code: C	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code: 49	8. Acid Rain Unit? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
-------------------------------------	--------------------------------	--------------------------	---	--

9. Package Unit:
Manufacturer: _____ Model Number: _____

10. Generator Nameplate Rating:

11. Emissions Unit Comment:

EMISSIONS UNIT INFORMATION

Section [4] of [4]

Emissions Unit Control Equipment

<p>1. Control Equipment/Method(s) Description: Drift eliminators will be used to reduce PM/PM₁₀ emissions.</p>
<p>2. Control Device or Method Code(s): 015</p>

EMISSIONS UNIT INFORMATION

Section [4] of [4]

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram:		2. Emission Point Type Code:	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code: F	6. Stack Height: feet	7. Exit Diameter: feet	
8. Exit Temperature: °F	9. Actual Volumetric Flow Rate: acfm	10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment:			

EMISSIONS UNIT INFORMATION

Section [4] of [4]

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment ____ of ____

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

Segment Description and Rate: Segment ____ of ____

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted:		2. Total Percent Efficiency of Control:	
3. Potential Emissions: lb/hour tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: Reference:		7. Emissions Method Code:	
8. Calculation of Emissions:			
9. Pollutant Potential/Estimated Fugitive Emissions Comment:			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

Section [4] of [4]

H. CONTINUOUS MONITOR INFORMATION

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

Section [4] of [4]

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____
2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____
3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____
4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable (construction application)
5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable
6. Compliance Demonstration Reports/Records <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> _____ Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> _____ To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> Not Applicable Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.
7. Other Information Required by Rule or Statute <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

EMISSIONS UNIT INFORMATION

Section [4] of [4]

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements <input type="checkbox"/> Attached, Document ID: _____
2. Compliance Assurance Monitoring <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
3. Alternative Methods of Operation <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
4. Alternative Modes of Operation (Emissions Trading) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
5. Acid Rain Part Application <input type="checkbox"/> Certificate of Representation (EPA Form No. 7610-1) <input type="checkbox"/> Copy Attached, Document ID: _____ <input type="checkbox"/> Acid Rain Part (Form No. 62-210.900(1)(a)) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> New Unit Exemption (Form No. 62-210.900(1)(a)2.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input checked="" type="checkbox"/> Not Applicable

EMISSIONS UNIT INFORMATION

Section [4] of [4]

Additional Requirements Comment

--

Attachment A

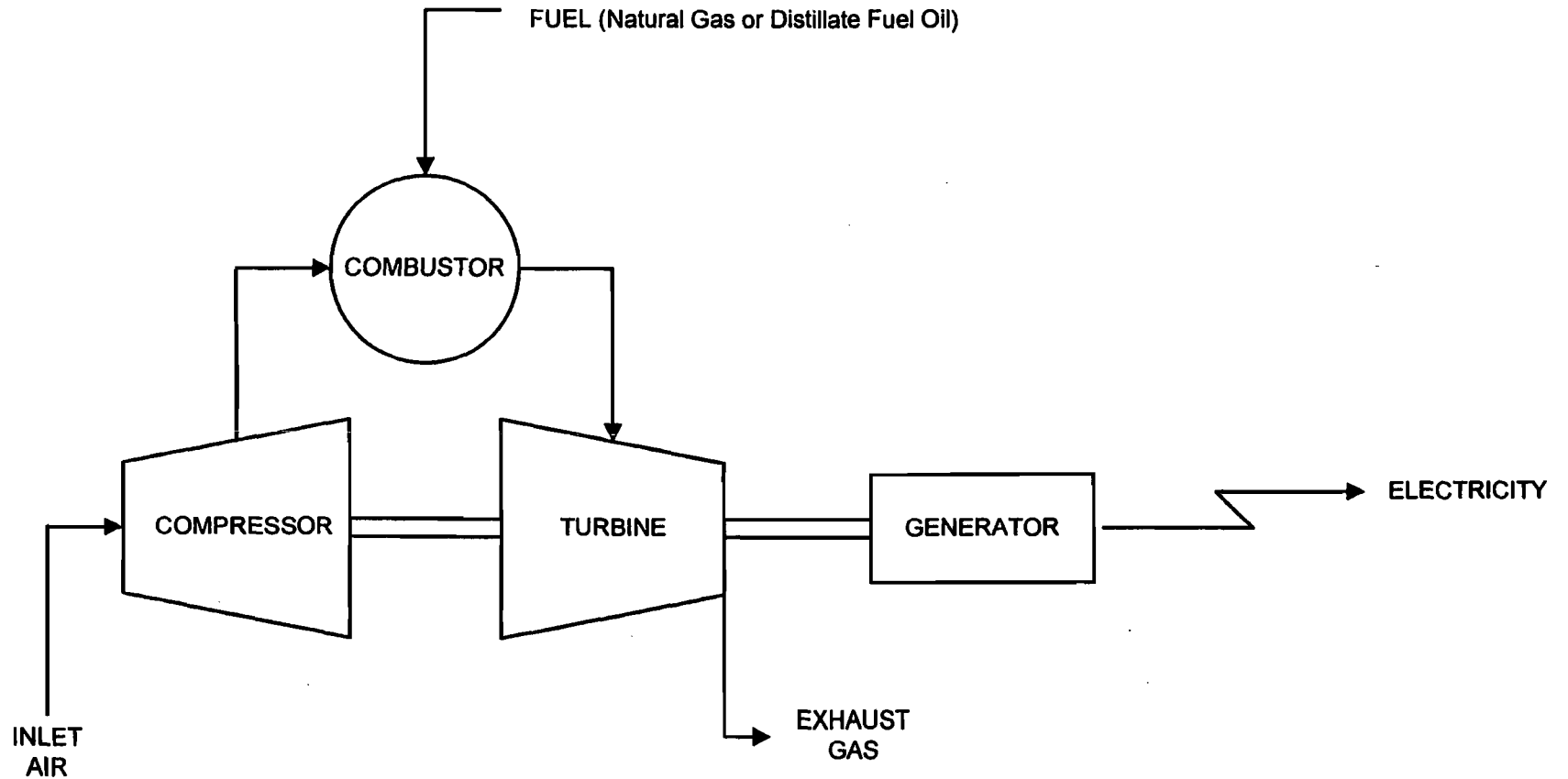
Facility Plot Plan

(Plot not scanned)
(In Hard file)

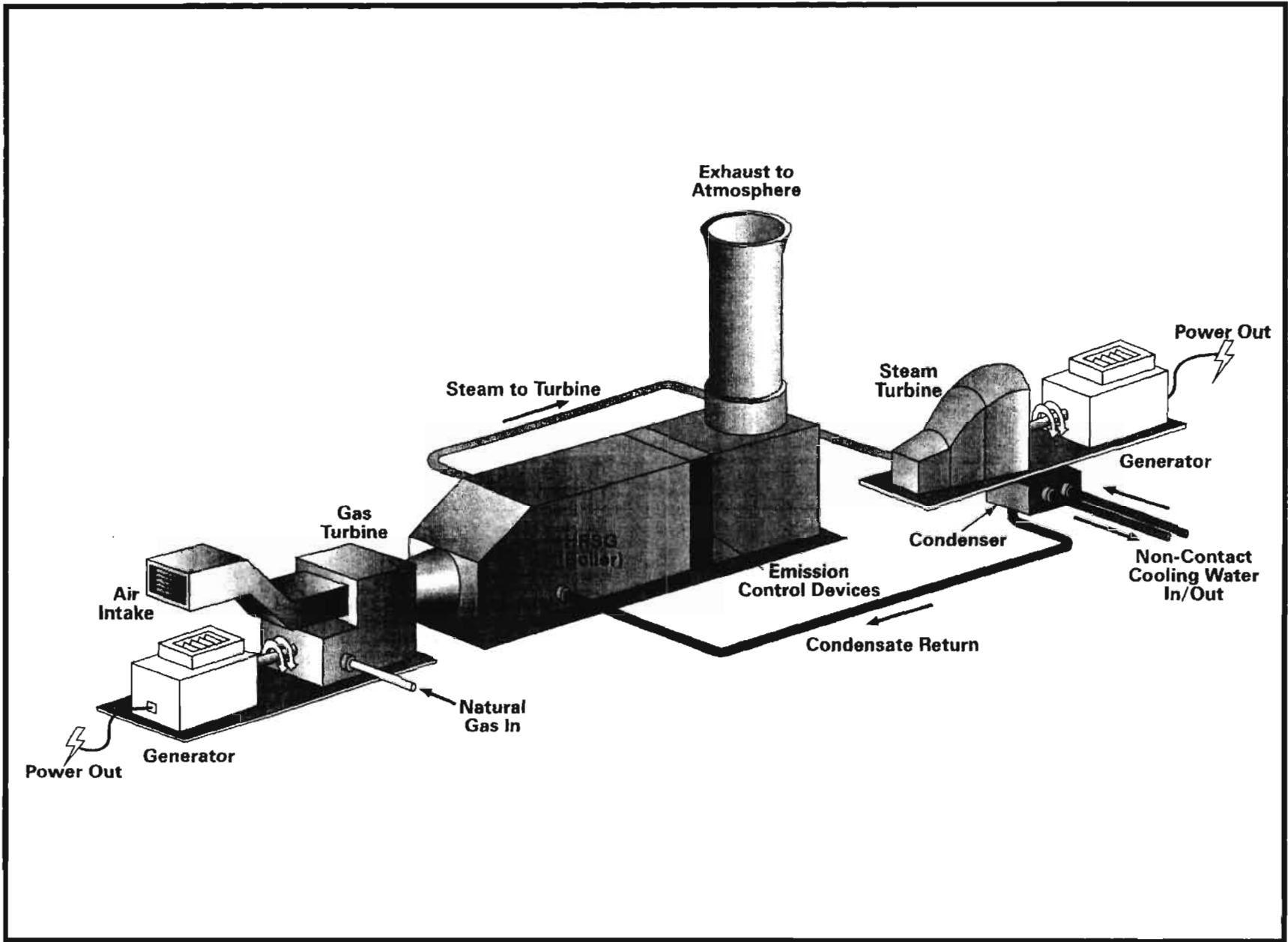
Attachment B

Process Flow Diagrams

Jacksonville Electric Authority
Brandy Branch Facility
Facility ID: Unknown



Simple Cycle Combustion Turbine
Process Flow Diagram



Attachment C

Precautions to Prevent Emissions of Unconfined Particulate Matter

Precautions to Prevent Emissions of Unconfined Particulate Matter

The facility has negligible amounts of unconfined particulate matter as a result of the operation of the facility. Potential examples of particulate matter include:

- Fugitive dust from paved and unpaved roads;
- Sandblasting abrasive material from facility maintenance activities.

Several precautions were taken to prevent emissions of particulate matter in the original design of the facility. These include:

- Paving of roads, parking areas and equipment yards;
- Landscaping and planting of vegetation.

Operational measures are undertaken at the facility which also minimize particulate emissions, in accordance with Rule 62-296.320(4)(c) F.A.C.:

- Maintenance of paved areas as needed;
- Regular mowing of grass and care of vegetation;
- Limiting access to plant property for unnecessary vehicles.

Attachment D

Description of Proposed Modification

Description of Proposed Modification

See the letter report accompanying this application for a description of the proposed modification covered under this application.

Attachment E

Rule Applicability Analysis

Rule Applicability Analysis

See the letter report accompanying this application for a discussion on rule applicability.

Attachment F

Identification of Applicable Requirements

Identification of Applicable Requirements

List of facility-wide applicable regulations

- Facility-wide applicable regulations specified in construction permit PSD-FL-310 are hereby incorporated by reference.
- Facility-wide applicable regulations hereby incorporates by reference the Title V core list of applicable regulations that all Title V sources are presumptively subject.

Unit 1 – List of applicable regulations

- Applicable regulations specified in existing Title V permit 0310485-005-AV for Unit 1 are hereby incorporated by reference.
- Emission unit applicable regulations hereby incorporates by reference the Title V core list of applicable regulations that all Title V sources are presumptively subject.
- 40 CFR 60, Subpart A
- 40 CFR 60, Subpart GG
- 40 CFR 72
- 40 CFR 73
- 40 CFR 75
- 40 CFR 77
- 62-204.800(8)(c)
- 62-204.800(8)(d)
- 62-204.800(8)(b)39
- 62-204.800(8)(e)
- 62-204.800(16)
- 62-204.800(17)
- 62-204.800(18)
- 62-204.800(18)
- 62-214
- 62-297.401
- Jacksonville Environmental Protection Board, Rule 2
- Ordinance Code, City of Jacksonville, Title X, Chapter 376
- Ordinance Code, City of Jacksonville, Title V, Chapter 362

Unit 2 – List of applicable regulations

- Applicable regulations specified in construction permit PSD-FL-310 for Unit 2 are hereby incorporated by reference.
- Emission unit applicable regulations hereby incorporates by reference the Title V core list of applicable regulations that all Title V sources are presumptively subject.
- 40 CFR 60, Subpart A
- 40 CFR 60, Subpart GG
- 40 CFR 60, Subpart Db
- 40 CFR 72
- 40 CFR 73
- 40 CFR 75
- 40 CFR 77

- 62-204.800(8)(c)
- 62-204.800(8)(d)
- 62-204.800(8)(b)39
- 62-204.800(8)(b)3
- 62-204.800(8)(e)
- 62-204.800(16)
- 62-204.800(17)
- 62-204.800(18)
- 62-204.800(20)
- 62-214
- 62-297.401
- Jacksonville Environmental Protection Board, Rule 2
- Ordinance Code, City of Jacksonville, Title X, Chapter 376
- Ordinance Code, City of Jacksonville, Title V, Chapter 362

Unit 3 – List of applicable regulations

- Applicable regulations specified in construction permit PSD-FL-310 for Unit 3 are hereby incorporated by reference.
- Emission unit applicable regulations hereby incorporates by reference the Title V core list of applicable regulations that all Title V sources are presumptively subject.
- 40 CFR 60, Subpart A
- 40 CFR 60, Subpart GG
- 40 CFR 60, Subpart Db
- 40 CFR 72
- 40 CFR 73
- 40 CFR 75
- 40 CFR 77
- 62-204.800(8)(c)
- 62-204.800(8)(d)
- 62-204.800(8)(b)39
- 62-204.800(8)(b)3
- 62-204.800(8)(e)
- 62-204.800(16)
- 62-204.800(17)
- 62-204.800(18)
- 62-204.800(20)
- 62-214
- 62-297.401
- Jacksonville Environmental Protection Board, Rule 2
- Ordinance Code, City of Jacksonville, Title X, Chapter 376
- Ordinance Code, City of Jacksonville, Title V, Chapter 362

Attachment G

Compliance Report and Plan

Compliance Report and Plan

Because the combined cycle combustion turbines (Units 2 and 3) have not yet begun operation, the initial compliance tests required by Construction Permit PSD-FL-310 have not been completed. Initial compliance tests required by Construction Permit PSD-FL-310 will be completed in accordance with Permit PSD-FL-310 under the following compliance plan:

- Required notification of the compliance test dates will be made to FDEP.
- Stack testing will be performed in accordance with appropriate EPA/FDEP test methods.
- FDEP will be notified when a compliance test has been completed.
- JEA will submit the results of each compliance test to FDEP within 45 days of completion of that compliance test.

If new regulatory requirements become applicable in the future, or if any non-compliance items are discovered after submittal of this application, the necessary steps will be taken to ensure compliance in a timely manner. This is in accordance with company policy of maintaining continuous compliance with all applicable rules and regulations.

Attachment H

Requested Changes to Current Title V Air Operation Permit

Requested Changes to Current Title V Operating Permit

See the letter report accompanying this application for a discussion on requested changes to existing facility permits.

Attachment I

Fuel Analysis or Specification

Fuel Analysis or Specification

Fuel is specified as pipeline quality sweet 2.0 natural gas (2 grains per 100 standard cubic foot), No. 2 distillate fuel oil containing no more than 0.05% sulfur and lower sulfur fuel oil containing no more than 0.0065% sulfur.

index of pages previous page next page

FLORIDA GAS TRANSMISSION COMPANY
FERC Gas Tariff
Third Revised Volume No. 1

Third Revised Sheet No. 102C
Superseding
Second Revised Sheet No. 102C

GENERAL TERMS AND CONDITIONS
(continued)

am. GISB Definitions - shall mean any such definitions issued by GISB which have been adopted by the FERC. Transporter incorporates GISB Definitions (Version 1.3, July 31, 1998) 1.2.8 through 1.2.12 and 4.2.1 through 4.2.8 by reference herein.

2. QUALITY

- A. Gas delivered by Shipper or for its account into Transporter's pipeline system at receipt points shall conform to the following quality standards:
1. shall be free from objectionable odors, solid matter, dust, gums, and gum forming constituents, or any other substance which might interfere with the merchantability of the gas stream, or cause interference with proper operation of the lines, meters, regulators, or other appliances through which it may flow;
 2. shall contain not more than seven (7) pounds of water vapor per one thousand (1,000) MCF;
 3. shall contain not more than one quarter (1/4) grain of hydrogen sulphide per one hundred (100) cubic feet of gas;
 4. shall contain not more than ten (10) grains of total sulphur per one hundred (100) cubic feet of gas;
 5. shall contain not more than a combined total three percent (3%) by volume of carbon dioxide and/or nitrogen;
 6. shall contain not more than one quarter percent (1/4%) by volume of oxygen;

Issued by: Robert B. Kilmer, Vice President
Issued on: July 1, 1999

Effective: August 1, 1999

index of pages previous page next page

SPECIFICATIONS FOR #2 LOW SULFUR DIESEL FUEL

The oil shall be hydrocarbon oil, free from alkali, mineral acid, grit, fibrous or other foreign matter and shall meet the following physical and chemical properties:

- 1) Gravity: A.P.I. 30 minimum (ASTM D287)
- 2) Flash: 130 F minimum (ASTM D93)
- 3) Viscosity: Kinematic, Centistokes at 100 F, minimum 2.0, maximum 3.0 (ASTM D445)
- 4) Water & Sediment: .50% maximum, (ASTM D1796 or D2700)
- 5) Pour Point: 0 F maximum (ASTM D97)
- 6) Distillation: 10% Point, 480 F maximum, 90% Point, 640 F maximum, End Point 690 F maximum (ASTM D86)
- 7) Sulfur: Low Sulfur - 0.05% maximum (ASTM D129 or D1552),
- 8) BTU: minimum 138,000 BTU's per gallon (ASTM D240)
- 9) Carbon Residue on 10% bottoms: .25 Max (ASTM D189)
- 10) Trace Metals (PPM, Max):
 - Calcium 4.0
 - Lead 1.0
 - Potassium 2.0
 - Vanadium 1.5.

Specifications for lower sulfur fuel oil

The lower sulfur fuel oil is expected to have the same specifications as the #2 low sulfur diesel fuel, except the sulfur content will be a maximum 0.0065%, by weight.

Attachment J

Detailed Description of Control Equipment

Detailed Description of Control Equipment

For Unit No. 1 with natural gas firing, low NO_x burners will be used to control NO_x emissions. For Unit No. 1 with fuel oil firing, water injection will be used to limit NO_x emissions by lowering the combustion temperature. For further information on Unit No. 1 control equipment refer to the simple cycle combustion turbine PSD application submitted to FDEP in May 1999.

For Unit No. 2 and Unit No. 3 with natural gas firing, dry low NO_x burners with an SCR will be used to limit NO_x emissions. For Unit No. 2 and Unit No. 3 with fuel oil firing, water injection with an SCR will be used to limit NO_x emissions. For further information on Unit No. 2 and Unit No. 3 control equipment refer to Appendix 10.7 – PSD Application of the Site Certification Application for the JEA Brandy Branch Combined Cycle Conversion submitted to FDEP in December 2000.

Attachment K

Procedures for Startup and Shutdown

Procedures for Startup and Shutdown

Startup and shutdown will be completed in accordance with the manufacturers' operating procedures and/or based on plant experience. Excess emissions from startup and shutdown are permitted in condition 25 of PSD permit PSD-FL-310 and by condition A.15 of operation permit No. 0310485-005-AV.

Attachment L

Alternative Methods of Operation

Alternative Methods of Operation

Emission Units 001, 002 and 003 can operate on pipeline quality 2.0 natural gas (2 grains sulfur per 100 standard cubic foot), No. 2 distillate fuel oil (0.05% sulfur) and Lower sulfur fuel oil (0.0065%)

The following operating limitations are for the operation of Units No. 1, No.2 and No. 3 on natural gas and/or 0.05% sulfur fuel oil. These are the currently permitted operational limits:

- Annual hours of operation:
 - Simple Cycle Unit (Unit No. 1)
 - 4,750 hours total.
 - 750 hours of operation with the 0.05% sulfur fuel oil.
 - Combined Cycle Units (Unit No. 1 and Unit No. 2)
 - No limit on total annual hours of operation.
 - 576 total hours of operation with 0.05% sulfur fuel oil firing for Unit No. 2 and Unit No. 3 combined.
- Short-term operational limits:
 - No daily limitations are required when firing only natural gas in Unit No.1, Unit No. 2 and Unit No. 3.
 - When any of the three combustion turbines (Unit No. 1, Unit No. 2 or Unit No. 3) fires 0.05% sulfur fuel oil during a calendar day that combustion turbine is limited to 16 hours of daily operation on any fuel for that calendar day. Also, the other two Units shall not be fired on any day in which 0.05% sulfur fuel oil is fired in one of the Units.

The following operating limitations are proposed for the operation of Units No. 1, No.2 and No. 3 on natural gas and/or the lower sulfur fuel oil:

- Annual hours of operation:
 - Simple Cycle Unit (Unit No. 1)
 - 4,750 hours total (as currently permitted).
 - 1,000 hours of operation with the lower sulfur fuel oil.
 - Combined Cycle Units (Unit No. 1 and Unit No. 2)
 - No limit on total annual hours of operation (as currently permitted).
 - 2,000 total hours of operation with lower sulfur fuel oil firing for Unit No. 2 and Unit No. 3 combined.
- Short-term operational limits:
 - No daily limitations are required when firing only natural gas in Unit No.1, Unit No. 2 and Unit No. 3. (same as currently permitted)
 - With Unit No. 2 or Unit No. 3 firing lower sulfur fuel oil:

- No daily limitation on Unit No. 2 or Unit No. 3. Each of Unit No. 2 and Unit No. 3 are allowed to fire either natural gas or lower sulfur fuel oil for the entire calendar day (24 hr/day).
- Unit No. 1 is limited to 8 hours of operation on any fuel on any day in which lower sulfur fuel oil is fired in Unit No.2 or Unit No. 3.
- With Unit No. 1 firing lower sulfur fuel oil for more than 8 hours during a calendar day:
 - Unit No. 2 and Unit No. 3 shall not be fired on lower sulfur fuel oil during any calendar day in which Unit No. 1 is fired with lower sulfur fuel oil for more than 8 hours.
 - On calendar days in which Unit No. 2 and Unit No. 3 do not fire lower sulfur fuel oil, Unit No. 1 is allowed to fire either natural gas or lower sulfur fuel oil for the entire calendar day (24 hr/day).

Attachment M

Acid Rain Part Application



December 30, 1999

Mr. Scott Sheplak, P.E.
Title V Administrator
Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RE: Brandy Branch Facility
Acid Rain Application Forms

Dear Mr. Sheplak:

Enclosed please find the Acid Rain Application Forms for the Brandy Branch Facility.

If you have any questions with regard to this matter, please contact me at (904) 665-6247.

Sincerely,

A handwritten signature in black ink, appearing to read "N. Bert Gianazza", is written over a horizontal line. The signature is cursive and somewhat stylized.

N. Bert Gianazza, P.E.
Environmental Permitting
& Compliance Group

cc: USEPA
USEPA, Region 4

bc: J. Connolly
E. Mims
L. Starner
B. Gianazza
File

bbacidrain

Phase II Permit Application

For more information, see instructions and refer to 40 CFR 72.30 and 72.31 and Chapter 62-214, F.A.C.

This submission is: New Revised

STEP 1

Identify the source by plant name, State, and ORIS code from NADB

Plant Name	Brandy Branch	State	FL	ORIS Code	7846
------------	---------------	-------	----	-----------	------

STEP 2 Enter the boiler ID# from NADB for each affected unit and indicate whether a repowering plan is being submitted for the unit by entering "yes" or "no" at column c. For new units, enter the requested information in columns d and e.

Compliance Plan				
a	b	c	d	e
Boiler ID#	Unit will hold allowances in accordance with 40 CFR 72.9(c)(1)	Repowering Plan	New Units Commence Operation Date	New Units Monitor Certification Deadline
001	Yes		Dec. 2000	Dec. 2000
002	Yes		Dec. 2000	Dec. 2000
003	Yes		Dec. 2001	Dec. 2001
	Yes			
	Yes			
	Yes			
	Yes			
	Yes			
	Yes			
	Yes			
	Yes			
	Yes			
	Yes			

STEP 3

Check the box if the response in column c of Step 2 is "Yes for any unit

For each unit that will be repowered, the Repowering Extension Plan form is included and the Repowering Technology Petition form has been submitted or will be submitted by June 1, 1997.

Plant Name (from Step 1) **Brandy Branch**

STEP 4
 Read the standard requirements and certification, enter the name of the designated representative, and sign and date

Standard Requirements

Permit Requirements.

- (1) The designated representative of each Acid Rain source and each Acid Rain unit at the source shall:
 - (i) Submit a complete Acid Rain part application (including a compliance plan) under 40 CFR part 72, Rules 62-214.320 and 330, F.A.C. in accordance with the deadlines specified in Rule 62-214.320, F.A.C.; and
 - (ii) Submit in a timely manner any supplemental information that the permitting authority determines is necessary in order to review an Acid Rain part application and issue or deny an Acid Rain permit;
- (2) The owners and operators of each Acid Rain source and each Acid Rain unit at the source shall:
 - (i) Operate the unit in compliance with a complete Acid Rain part application or a superseding Acid Rain part issued by the permitting authority; and
 - (ii) Have an Acid Rain Part.

Monitoring Requirements.

- (1) The owners and operators and, to the extent applicable, designated representative of each Acid Rain source and each Acid Rain unit at the source shall comply with the monitoring requirements as provided in 40 CFR part 75, and Rule 62-214.420, F.A.C.
- (2) The emissions measurements recorded and reported in accordance with 40 CFR part 75 shall be used to determine compliance by the unit with the Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program.
- (3) The requirements of 40 CFR part 75 shall not affect the responsibility of the owners and operators to monitor emissions of other pollutants or other emissions characteristics at the unit under other applicable requirements of the Act and other provisions of the operating permit for the source.

Sulfur Dioxide Requirements.

- (1) The owners and operators of each source and each Acid Rain unit at the source shall:
 - (i) Hold allowances, as of the allowance transfer deadline, in the unit's compliance subaccount (after deductions under 40 CFR 73.34(c)) not less than the total annual emissions of sulfur dioxide for the previous calendar year from the unit; and
 - (ii) Comply with the applicable Acid Rain emissions limitations for sulfur dioxide.
- (2) Each ton of sulfur dioxide emitted in excess of the Acid Rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Act.
- (3) An Acid Rain unit shall be subject to the requirements under paragraph (1) of the sulfur dioxide requirements as follows:
 - (i) Starting January 1, 2000, an Acid Rain unit under 40 CFR 72.6(a)(2); or
 - (ii) Starting on the later of January 1, 2000 or the deadline for monitor certification under 40 CFR part 75, an Acid Rain unit under 40 CFR 72.6(a)(3).
- (4) Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program.
- (5) An allowance shall not be deducted in order to comply with the requirements under paragraph (1)(i) of the sulfur dioxide requirements prior to the calendar year for which the allowance was allocated.
- (6) An allowance allocated by the Administrator under the Acid Rain Program is a limited authorization to emit sulfur dioxide in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the Acid Rain permit application, the Acid Rain permit, or the written exemption under 40 CFR 72.7 and 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization.
- (7) An allowance allocated by the Administrator under the Acid Rain Program does not constitute a property right.

Nitrogen Oxides Requirements. The owners and operators of the source and each Acid Rain unit at the source shall comply with the applicable Acid Rain emissions limitation for nitrogen oxides.

Excess Emissions Requirements.

- (1) The designated representative of an Acid Rain unit that has excess emissions in any calendar year shall submit a proposed offset plan, as required under 40 CFR part 77.
- (2) The owners and operators of an Acid Rain unit that has excess emissions in any calendar year shall:
 - (i) Pay without demand the penalty required, and pay upon demand the interest on that penalty, as required by 40 CFR part 77; and
 - (ii) Comply with the terms of an approved offset plan, as required by 40 CFR part 77.

Recordkeeping and Reporting Requirements.

- (1) Unless otherwise provided, the owners and operators of the source and each Acid Rain unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 5 years, in writing by the Administrator or permitting authority:
 - (i) The certificate of representation for the designated representative for the source and each Acid Rain unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with Rule 62-214.350, F.A.C.; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation changing the designated representative;
 - (ii) All emissions monitoring information, in accordance with 40 CFR part 75;
 - (iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the Acid Rain Program; and,

Plant Name (from Step 1) **Brandy Branch**Recordkeeping and Reporting Requirements (cont)

(iv) Copies of all documents used to complete an Acid Rain part application and any other submission under the Acid Rain Program or to demonstrate compliance with the requirements of the Acid Rain Program.

(2) The designated representative of an Acid Rain source and each Acid Rain unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR part 72 subpart I and 40 CFR part 75.

Liability.

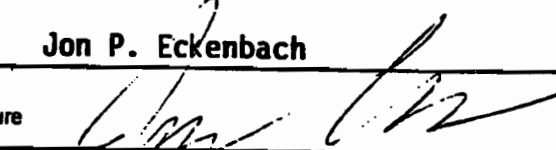
- (1) Any person who knowingly violates any requirement or prohibition of the Acid Rain Program, a complete Acid Rain part application, an Acid Rain part, or a written exemption under 40 CFR 72.7 or 72.8, including any requirement for the payment of any penalty owed to the United States, shall be subject to enforcement pursuant to section 113(c) of the Act.
- (2) Any person who knowingly makes a false, material statement in any record, submission, or report under the Acid Rain Program shall be subject to criminal enforcement pursuant to section 113(c) of the Act and 18 U.S.C. 1001.
- (3) No permit revision shall excuse any violation of the requirements of the Acid Rain Program that occurs prior to the date that the revision takes effect.
- (4) Each Acid Rain source and each Acid Rain unit shall meet the requirements of the Acid Rain Program.
- (5) Any provision of the Acid Rain Program that applies to an Acid Rain source (including a provision applicable to the designated representative of an Acid Rain source) shall also apply to the owners and operators of such source and of the Acid Rain units at the source.
- (6) Any provision of the Acid Rain Program that applies to an Acid Rain unit (including a provision applicable to the designated representative of an Acid Rain unit) shall also apply to the owners and operators of such unit. Except as provided under 40 CFR 72.44 (Phase II repowering extension plans), and except with regard to the requirements applicable to units with a common stack under 40 CFR part 75 (including 40 CFR 75.16, 75.17, and 75.18), the owners and operators and the designated representative of one Acid Rain unit shall not be liable for any violation by any other Acid Rain unit of which they are not owners or operators or the designated representative and that is located at a source of which they are not owners or operators or the designated representative.
- (7) Each violation of a provision of 40 CFR parts 72, 73, 75, 77, and 78 by an Acid Rain source or Acid Rain unit, or by an owner or operator or designated representative of such source or unit, shall be a separate violation of the Act.

Effect on Other Authorities. No provision of the Acid Rain Program, an Acid Rain part application, an Acid Rain part, or a written exemption under 40 CFR 72.7 or 72.8 shall be construed as:

- (1) Except as expressly provided in title IV of the Act, exempting or excluding the owners and operators and, to the extent applicable, the designated representative of an Acid Rain source or Acid Rain unit from compliance with any other provision of the Act, including the provisions of title I of the Act relating to applicable National Ambient Air Quality Standards or State Implementation Plans;
- (2) Limiting the number of allowances a unit can hold; provided, that the number of allowances held by the unit shall not affect the source's obligation to comply with any other provisions of the Act;
- (3) Requiring a change of any kind in any State law regulating electric utility rates and charges, affecting any State law regarding such State regulation, or limiting such State regulation, including any prudence review requirements under such State law;
- (4) Modifying the Federal Power Act or affecting the authority of the Federal Energy Regulatory Commission under the Federal Power Act; or,
- (5) Interfering with or impairing any program for competitive bidding for power supply in a State in which such program is established.

Certification

I am authorized to make this submission on behalf of the owners and operators of the Acid Rain source or Acid Rain units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Name	Jon P. Eckenbach	
Signature		Date 12-14-99

STEP 5 (optional)
Enter the source AIRS
FINDS identification

AIRS
FINDS



Certificate of Representation

For more information, see instructions and refer to 40 CFR 72.24

This submission is: New Revised (revised submissions must be completed in full; see instructions)

This submission includes combustion or process sources under 40 CFR part 74

STEP 1
Identify the source by plant name, State, and ORIS code.

Plant Name Brandy Branch	State FL	ORIS Code 7846
---------------------------------	-----------------	-----------------------

STEP 2
Enter requested information for the designated representative.

Name Jon P. Eckenbach	
Address 21 West Church Street Jacksonville, Florida 32202	
Phone Number (904) 665-6315	Fax Number (904) 554-7366
E-mail address (if available) eckep@jea.com	

STEP 3
Enter requested information for the alternate designated representative, if applicable.

Name Tim E. Perkins	
Phone Number (904) 665-4520	Fax Number (904) 665-7376
E-mail address (if available) perkte@jea.com	

STEP 4
Complete Step 5, read the certifications, and sign and date. For a designated representative of a combustion or process source under 40 CFR part 74, the references in the certifications to "affected unit" or "affected units" also apply to the combustion or process source under 40 CFR part 74 and the references to "affected source" also apply to the source at which the combustion or process source is located.

I certify that I was selected as the designated representative or alternate designated representative, as applicable, by an agreement binding on the owners and operators of the affected source and each affected unit at the source.

I certify that I have given notice of the agreement, selecting me as the designated representative for the affected source and each affected unit at the source identified in this certificate of representation, in a newspaper of general circulation in the area where the source is located or in a State publication designed to give general public notice.

I certify that I have all necessary authority to carry out my duties and responsibilities under the Acid Rain Program on behalf of the owners and operators of the affected source and of each affected unit at the source and that each such owner and operator shall be fully bound by my actions, inactions, or submissions.

I certify that I shall abide by any fiduciary responsibilities imposed by the agreement by which I was selected as designated representative or alternate designated representative, as applicable.

I certify that the owners and operators of the affected source and of each affected unit at the source shall be bound by any order issued to me by the Administrator, the permitting authority, or a court regarding the source or unit.

Where there are multiple holders of a legal or equitable title to, or a leasehold interest in, an affected unit, or where a utility or industrial customer purchases power from an affected unit under life-of-the-unit, firm power contractual arrangements, I certify that:

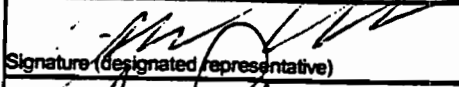

I have given a written notice of my selection as the designated representative or alternate designated representative, as applicable, and of the agreement by which I was selected to each owner and operator of the affected source and of each affected unit at the source; and

Allowances and the proceeds of transactions involving allowances will be deemed to be held or distributed in proportion to each holder's legal, equitable, leasehold, or contractual reservation or entitlement or, if such multiple holders have expressly provided for a different distribution of allowances by contract, that allowances and the proceeds of transactions involving allowances will be deemed to be held or distributed in accordance with the contract.

The agreement by which I was selected as the alternate designated representative, if applicable, includes a procedure for the owners and operators of the source and affected units at the source to authorize the alternate designated representative to act in lieu of the designated representative.

Plant Name (from Step 1) **Brandy Branch**

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

	12-14-99
Signature (designated representative)	Date
	12-16-99
Signature (alternate designated representative)	Date

STEP 5
Provide the name of every owner and operator of the source and identify each affected unit (or combustion or process source) they own and/or operate.

Name JEA					<input checked="" type="checkbox"/> Owner	<input checked="" type="checkbox"/> Operator
ID# 001	ID# 002	ID# 003	ID#	ID#	ID#	ID#
ID#	ID#	ID#	ID#	ID#	ID#	ID#

Name					<input type="checkbox"/> Owner	<input type="checkbox"/> Operator
ID#	ID#	ID#	ID#	ID#	ID#	ID#
ID#	ID#	ID#	ID#	ID#	ID#	ID#

Name					<input type="checkbox"/> Owner	<input type="checkbox"/> Operator
ID#	ID#	ID#	ID#	ID#	ID#	ID#
ID#	ID#	ID#	ID#	ID#	ID#	ID#

Name					<input type="checkbox"/> Owner	<input type="checkbox"/> Operator
ID#	ID#	ID#	ID#	ID#	ID#	ID#
ID#	ID#	ID#	ID#	ID#	ID#	ID#



Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
January 19, 2000

David B. Struhs
Secretary

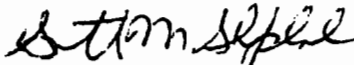
Mr. N. Bert Gianazza, P.E.
Environmental Permitting & Compliance Group
Jacksonville Electric Authority
21 West Church Street
Jacksonville, FL 32202-3139

Re: Acid Rain Phase II Permit Application
Brandy Branch Facility; ORIS Code: 7846

Dear Mr. Gianazza:

Thank you for your recent submission of the Acid Rain Phase II Permit Application for the subject facility. We have reviewed the document and found it to be complete.

Sincerely,


Scott M. Sheplak, P.E.
Administrator
Title V Section

cc: Jenny Jachim, EPA Region 4



Certificate of Representation

For more information, see instructions and refer to 40 CFR 72.24

This submission is: New Revised (revised submissions must be completed in full; see instructions)

This submission includes combustion or process sources under 40 CFR part 74

STEP 1

Identify the source by plant name, State, and ORIS code.

Plant Name	Brandy Branch	State	FL	7846 ORIS Code
------------	---------------	-------	----	-------------------

STEP 2

Enter requested information for the designated representative.

Name	Jon P. Eckenbach, Executive Vice President			
Address	21 West Church Street Jacksonville, FL 32202			
Phone Number	(904) 665-6315	Fax Number	(904) 665-7366	
E-mail address (if available)	eckejp@jea.com			

STEP 3

Enter requested information for the alternate designated representative, if applicable.

Name	Susan Hughes, Vice President			
Phone Number	(904) 665-6248	Fax Number	(904) 665-7376	
E-mail address (if available)	hughsn@jea.com			

STEP 4.

Complete Step 5, read the certifications, and sign and date. For a designated representative of a combustion or process source under 40 CFR part 74, the references in the certifications to "affected unit" or "affected units" also apply to the combustion or process source under 40 CFR part 74 and the references to "affected source" also apply to the source at which the combustion or process source is located.

I certify that I was selected as the designated representative or alternate designated representative, as applicable, by an agreement binding on the owners and operators of the affected source and each affected unit at the source.

I certify that I have given notice of the agreement, selecting me as the 'designated representative' for the affected source and each affected unit at the source identified in this certificate of representation, in a newspaper of general circulation in the area where the source is located or in a State publication designed to give general public notice.

I certify that I have all necessary authority to carry out my duties and responsibilities under the Acid Rain Program on behalf of the owners and operators of the affected source and of each affected unit at the source and that each such owner and operator shall be fully bound by my actions, inactions, or submissions.

I certify that I shall abide by any fiduciary responsibilities imposed by the agreement by which I was selected as designated representative or alternate designated representative, as applicable.

I certify that the owners and operators of the affected source and of each affected unit at the source shall be bound by any order issued to me by the Administrator, the permitting authority, or a court regarding the source or unit.

Where there are multiple holders of a legal or equitable title to, or a leasehold interest in, an affected unit, or where a utility or industrial customer purchases power from an affected unit under life-of-the-unit, firm power contractual arrangements, I certify that:

I have given a written notice of my selection as the designated representative or alternate designated representative, as applicable, and of the agreement by which I was selected to each owner and operator of the affected source and of each affected unit at the source; and

Allowances and the proceeds of transactions involving allowances will be deemed to be held or distributed in proportion to each holder's legal, equitable, leasehold, or contractual reservation or entitlement or, if such multiple holders have expressly provided for a different distribution of allowances by contract, that allowances and the proceeds of transactions involving allowances will be deemed to be held or distributed in accordance with the contract.

The agreement by which I was selected as the alternate designated representative, if applicable, includes a procedure for the owners and operators of the source and affected units at the source to authorize the alternate designated representative to act in lieu of the designated representative.

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

<i>[Signature]</i> Signature (designated representative)	11/14/00 Date
<i>[Signature]</i> Signature (alternate designated representative)	11/17/00 Date

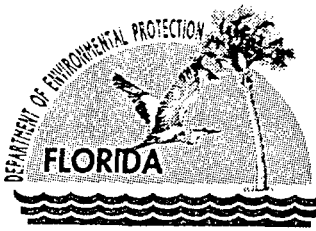
STEP 5
Provide the name of every owner and operator of the source and identify each affected unit (or combustion or process source) they own and/or operate.

Name JEA					<input checked="" type="checkbox"/> Owner	<input checked="" type="checkbox"/> Operator
ID# 1	ID# 2	ID# 3	ID#	ID#	ID#	ID#
ID#	ID#	ID#	ID#	ID#	ID#	ID#

Name					<input type="checkbox"/> Owner	<input type="checkbox"/> Operator
ID#	ID#	ID#	ID#	ID#	ID#	ID#
ID#	ID#	ID#	ID#	ID#	ID#	ID#

Name					<input type="checkbox"/> Owner	<input type="checkbox"/> Operator
ID#	ID#	ID#	ID#	ID#	ID#	ID#
ID#	ID#	ID#	ID#	ID#	ID#	ID#

Name					<input type="checkbox"/> Owner	<input type="checkbox"/> Operator
ID#	ID#	ID#	ID#	ID#	ID#	ID#
ID#	ID#	ID#	ID#	ID#	ID#	ID#



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

March 12, 2004

Mr. John Bunyak, Chief
Policy, Planning & Permit Review Branch
NPS – Air Quality Division
Post Office Box 25287
Denver, Colorado 80225

RE: JEA Brandy Branch
Lower Sulfur Fuel Oil Operation
DEP File No. 0310485-009-AC, PSD-FL-310A

Dear Mr. Bunyak:

Enclosed for your review and comment is a request for a PSD modification submitted by JEA for their Brandy Branch facility in Duval County, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/921-9533. If you have any questions, please contact Mike Halpin, review engineer, at 850/921-9519.

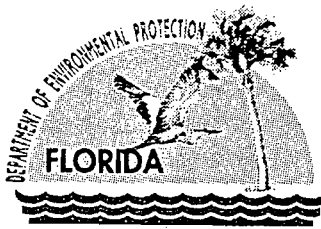
Sincerely,

Patty Cedeno
for James K. Pennington, P.E.
Administrator
North Permitting Section

JKP/pa
Enclosure
cc: M. Halpin

"More Protection, Less Process"

Printed on recycled paper.



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

March 12, 2004

Mr. Gregg M. Worley, Chief
Air Permits Section
U.S. EPA, Region 4
61 Forsyth Street
Atlanta, Georgia 30303-8960

RE: JEA Brandy Branch
Lower Sulfur Fuel Oil Operation
DEP File No. 0310485-009-AC, PSD-FL-310A

Dear Mr. Worley:

Enclosed for your review and comment is a request for a PSD modification submitted by JEA for their Brandy Branch facility in Duval County, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/921-9533. If you have any questions, please contact Mike Halpin, review engineer, at 850/921-9519.

Sincerely,

for *Patricia Adams*
James K. Pennington, P.E.
Administrator
North Permitting Section

JKP/pa
Enclosure
cc: M. Halpin

"More Protection, Less Process"

Printed on recycled paper.

Determination of Representative Emission and Stack Parameters and Potential to Emit Calculator

Combined Cycle Operation - Natural Gas								Combined Cycle Operation - Fuel Oil								Annual Operation																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
Load 100 percent GE7FA <table border="1"> <tr> <th>Case Name</th> <th>Case 1</th> <th>Case 2</th> <th>Case 3</th> <th>Case 4</th> <th>Case 5</th> <th>Case 6</th> <th>Case 7</th> </tr> <tr> <td>Ambient Temp (F)</td> <td>95</td> <td>95</td> <td>95</td> <td>95</td> <td>59</td> <td>59</td> <td>20</td> </tr> <tr> <td>Evap Cooler</td> <td>NO</td> <td>NO</td> <td>YES</td> <td>YES</td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> <tr> <td>Duct Firing</td> <td>YES</td> <td>NO</td> <td>NO</td> <td>YES</td> <td>NO</td> <td>YES</td> <td>NO</td> </tr> <tr> <td>Exit Temp (F)</td> <td>205</td> <td>208</td> <td>209</td> <td>207</td> <td>206</td> <td>204</td> <td>208</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>81.4</td> <td>81.5</td> <td>63.3</td> <td>63.1</td> <td>66.2</td> <td>66.1</td> <td>71.1</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>23.34</td> <td>21.12</td> <td>21.82</td> <td>23.78</td> <td>23.32</td> <td>23.92</td> <td>24.95</td> </tr> <tr> <td>CO</td> <td>62.57</td> <td>45.53</td> <td>46.47</td> <td>61.33</td> <td>50.29</td> <td>54.67</td> <td>54.26</td> </tr> <tr> <td>PM/PM10</td> <td>10.30</td> <td>9.50</td> <td>9.50</td> <td>10.20</td> <td>9.50</td> <td>9.70</td> <td>9.50</td> </tr> <tr> <td>SO2</td> <td>11.30</td> <td>10.30</td> <td>10.70</td> <td>11.60</td> <td>11.40</td> <td>11.70</td> <td>12.20</td> </tr> <tr> <td>VOC</td> <td>6.81</td> <td>2.73</td> <td>2.80</td> <td>6.38</td> <td>2.95</td> <td>4.05</td> <td>3.15</td> </tr> </table>								Case Name	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Ambient Temp (F)	95	95	95	95	59	59	20	Evap Cooler	NO	NO	YES	YES	NO	NO	NO	Duct Firing	YES	NO	NO	YES	NO	YES	NO	Exit Temp (F)	205	208	209	207	206	204	208	Exit Velocity (ft/s)	81.4	81.5	63.3	63.1	66.2	66.1	71.1	Emissions (lb/h)								NOX	23.34	21.12	21.82	23.78	23.32	23.92	24.95	CO	62.57	45.53	46.47	61.33	50.29	54.67	54.26	PM/PM10	10.30	9.50	9.50	10.20	9.50	9.70	9.50	SO2	11.30	10.30	10.70	11.60	11.40	11.70	12.20	VOC	6.81	2.73	2.80	6.38	2.95	4.05	3.15	Short-Term Enveloped Load Representative Emissions and Stack Parameters <table border="1"> <tr> <td>Exit Temp (F)</td> <td>204.00</td> <td>368.71</td> <td>K</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>61.40</td> <td>18.71</td> <td>m/s</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>24.95</td> <td>3.14</td> <td>g/s</td> </tr> <tr> <td>CO</td> <td>62.57</td> <td>7.88</td> <td>g/s</td> </tr> <tr> <td>PM/PM10</td> <td>10.30</td> <td>1.30</td> <td>g/s</td> </tr> <tr> <td>SO2</td> <td>12.20</td> <td>1.54</td> <td>g/s</td> </tr> <tr> <td>VOC</td> <td>6.81</td> <td>0.88</td> <td>g/s</td> </tr> </table>		Exit Temp (F)	204.00	368.71	K	Exit Velocity (ft/s)	61.40	18.71	m/s	Emissions (lb/h)				NOX	24.95	3.14	g/s	CO	62.57	7.88	g/s	PM/PM10	10.30	1.30	g/s	SO2	12.20	1.54	g/s	VOC	6.81	0.88	g/s	Annualized Enveloped Load Representative Emissions and Stack Parameters (59 Degrees) <table border="1"> <tr> <td>Exit Temp (F)</td> <td>204.00</td> <td>368.71</td> <td>K</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>66.10</td> <td>20.15</td> <td>m/s</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>23.92</td> <td>3.01</td> <td>g/s</td> </tr> <tr> <td>CO</td> <td>54.87</td> <td>6.91</td> <td>g/s</td> </tr> <tr> <td>PM/PM10</td> <td>9.70</td> <td>1.22</td> <td>g/s</td> </tr> <tr> <td>SO2</td> <td>11.70</td> <td>1.47</td> <td>g/s</td> </tr> <tr> <td>VOC</td> <td>4.05</td> <td>0.51</td> <td>g/s</td> </tr> </table>		Exit Temp (F)	204.00	368.71	K	Exit Velocity (ft/s)	66.10	20.15	m/s	Emissions (lb/h)				NOX	23.92	3.01	g/s	CO	54.87	6.91	g/s	PM/PM10	9.70	1.22	g/s	SO2	11.70	1.47	g/s	VOC	4.05	0.51	g/s	Load 100 percent GE7FA <table border="1"> <tr> <th>Case Name</th> <th>Case 14</th> <th>Case 15</th> <th>Case 16</th> <th>Case 17</th> </tr> <tr> <td>Ambient Temp (F)</td> <td>95</td> <td>59</td> <td>20</td> <td>95</td> </tr> <tr> <td>Evap Cooler</td> <td>NO</td> <td>NO</td> <td>NO</td> <td>YES</td> </tr> <tr> <td>Duct Firing</td> <td>NO</td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> <tr> <td>Exit Temp (F)</td> <td>272</td> <td>265</td> <td>265</td> <td>274</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>69.8</td> <td>75.3</td> <td>79.7</td> <td>71.7</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>101.23</td> <td>112.41</td> <td>119.37</td> <td>104.53</td> </tr> <tr> <td>CO</td> <td>61.43</td> <td>67.86</td> <td>72.43</td> <td>62.59</td> </tr> <tr> <td>PM/PM10</td> <td>17.90</td> <td>17.90</td> <td>17.90</td> <td>17.90</td> </tr> <tr> <td>SO2</td> <td>12.05</td> <td>13.39</td> <td>14.22</td> <td>12.45</td> </tr> <tr> <td>VOC</td> <td>7.05</td> <td>7.68</td> <td>8.14</td> <td>7.24</td> </tr> </table>								Case Name	Case 14	Case 15	Case 16	Case 17	Ambient Temp (F)	95	59	20	95	Evap Cooler	NO	NO	NO	YES	Duct Firing	NO	NO	NO	NO	Exit Temp (F)	272	265	265	274	Exit Velocity (ft/s)	69.8	75.3	79.7	71.7	Emissions (lb/h)					NOX	101.23	112.41	119.37	104.53	CO	61.43	67.86	72.43	62.59	PM/PM10	17.90	17.90	17.90	17.90	SO2	12.05	13.39	14.22	12.45	VOC	7.05	7.68	8.14	7.24	Short-Term Enveloped Load Representative Emissions and Stack Parameters <table border="1"> <tr> <td>Exit Temp (F)</td> <td>265.00</td> <td>402.59</td> <td>K</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>69.80</td> <td>21.28</td> <td>m/s</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>119.37</td> <td>15.04</td> <td>g/s</td> </tr> <tr> <td>CO</td> <td>72.43</td> <td>9.13</td> <td>g/s</td> </tr> <tr> <td>PM/PM10</td> <td>17.90</td> <td>2.28</td> <td>g/s</td> </tr> <tr> <td>SO2</td> <td>14.22</td> <td>1.79</td> <td>g/s</td> </tr> <tr> <td>VOC</td> <td>8.14</td> <td>1.03</td> <td>g/s</td> </tr> </table>		Exit Temp (F)	265.00	402.59	K	Exit Velocity (ft/s)	69.80	21.28	m/s	Emissions (lb/h)				NOX	119.37	15.04	g/s	CO	72.43	9.13	g/s	PM/PM10	17.90	2.28	g/s	SO2	14.22	1.79	g/s	VOC	8.14	1.03	g/s	Annualized Enveloped Load Representative Emissions and Stack Parameters (59 Degrees) <table border="1"> <tr> <td>Exit Temp (F)</td> <td>265.00</td> <td>402.59</td> <td>K</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>75.30</td> <td>22.95</td> <td>m/s</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>12.83</td> <td>1.62</td> <td>g/s</td> </tr> <tr> <td>CO</td> <td>7.75</td> <td>0.98</td> <td>g/s</td> </tr> <tr> <td>PM/PM10</td> <td>2.04</td> <td>0.28</td> <td>g/s</td> </tr> <tr> <td>SO2</td> <td>1.53</td> <td>0.19</td> <td>g/s</td> </tr> <tr> <td>VOC</td> <td>0.88</td> <td>0.11</td> <td>g/s</td> </tr> </table>		Exit Temp (F)	265.00	402.59	K	Exit Velocity (ft/s)	75.30	22.95	m/s	Emissions (lb/h)				NOX	12.83	1.62	g/s	CO	7.75	0.98	g/s	PM/PM10	2.04	0.28	g/s	SO2	1.53	0.19	g/s	VOC	0.88	0.11	g/s	Total Annual Dual Fuel Enveloped Load Representative Emissions and Stack Parameters (59 Degrees) <table border="1"> <tr> <td>Exit Temp (F)</td> <td>204.00</td> <td>368.71</td> <td>K</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>66.10</td> <td>20.15</td> <td>m/s</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>34.02</td> <td>4.29</td> <td>g/s</td> </tr> <tr> <td>CO</td> <td>58.35</td> <td>7.10</td> <td>g/s</td> </tr> <tr> <td>PM/PM10</td> <td>10.84</td> <td>1.34</td> <td>g/s</td> </tr> <tr> <td>SO2</td> <td>11.89</td> <td>1.50</td> <td>g/s</td> </tr> <tr> <td>VOC</td> <td>4.46</td> <td>0.58</td> <td>g/s</td> </tr> </table>		Exit Temp (F)	204.00	368.71	K	Exit Velocity (ft/s)	66.10	20.15	m/s	Emissions (lb/h)				NOX	34.02	4.29	g/s	CO	58.35	7.10	g/s	PM/PM10	10.84	1.34	g/s	SO2	11.89	1.50	g/s	VOC	4.46	0.58	g/s																																																																																																																																																																																																																																																																				
Case Name	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Ambient Temp (F)	95	95	95	95	59	59	20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Evap Cooler	NO	NO	YES	YES	NO	NO	NO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Duct Firing	YES	NO	NO	YES	NO	YES	NO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Exit Temp (F)	205	208	209	207	206	204	208																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Exit Velocity (ft/s)	81.4	81.5	63.3	63.1	66.2	66.1	71.1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
NOX	23.34	21.12	21.82	23.78	23.32	23.92	24.95																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
CO	62.57	45.53	46.47	61.33	50.29	54.67	54.26																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
PM/PM10	10.30	9.50	9.50	10.20	9.50	9.70	9.50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
SO2	11.30	10.30	10.70	11.60	11.40	11.70	12.20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
VOC	6.81	2.73	2.80	6.38	2.95	4.05	3.15																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Exit Temp (F)	204.00	368.71	K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Velocity (ft/s)	61.40	18.71	m/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
NOX	24.95	3.14	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CO	62.57	7.88	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
PM/PM10	10.30	1.30	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
SO2	12.20	1.54	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
VOC	6.81	0.88	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Temp (F)	204.00	368.71	K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Velocity (ft/s)	66.10	20.15	m/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
NOX	23.92	3.01	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CO	54.87	6.91	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
PM/PM10	9.70	1.22	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
SO2	11.70	1.47	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
VOC	4.05	0.51	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Case Name	Case 14	Case 15	Case 16	Case 17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Ambient Temp (F)	95	59	20	95																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Evap Cooler	NO	NO	NO	YES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Duct Firing	NO	NO	NO	NO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Exit Temp (F)	272	265	265	274																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Exit Velocity (ft/s)	69.8	75.3	79.7	71.7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
NOX	101.23	112.41	119.37	104.53																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
CO	61.43	67.86	72.43	62.59																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
PM/PM10	17.90	17.90	17.90	17.90																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
SO2	12.05	13.39	14.22	12.45																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
VOC	7.05	7.68	8.14	7.24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Exit Temp (F)	265.00	402.59	K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Velocity (ft/s)	69.80	21.28	m/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
NOX	119.37	15.04	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CO	72.43	9.13	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
PM/PM10	17.90	2.28	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
SO2	14.22	1.79	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
VOC	8.14	1.03	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Temp (F)	265.00	402.59	K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Velocity (ft/s)	75.30	22.95	m/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
NOX	12.83	1.62	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CO	7.75	0.98	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
PM/PM10	2.04	0.28	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
SO2	1.53	0.19	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
VOC	0.88	0.11	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Temp (F)	204.00	368.71	K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Velocity (ft/s)	66.10	20.15	m/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
NOX	34.02	4.29	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CO	58.35	7.10	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
PM/PM10	10.84	1.34	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
SO2	11.89	1.50	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
VOC	4.46	0.58	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Load 75 percent <table border="1"> <tr> <th>Case Name</th> <th>Case 8</th> <th>Case 10</th> <th>Case 12</th> </tr> <tr> <td>Ambient Temp (F)</td> <td>95</td> <td>59</td> <td>20</td> </tr> <tr> <td>Evap Cooler</td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> <tr> <td>Duct Firing</td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> <tr> <td>Exit Temp (F)</td> <td>198</td> <td>194</td> <td>194</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>50.1</td> <td>53.1</td> <td>55.4</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>17.34</td> <td>18.89</td> <td>20.01</td> </tr> <tr> <td>CO</td> <td>37.87</td> <td>41.05</td> <td>43.18</td> </tr> <tr> <td>PM/PM10</td> <td>9.50</td> <td>9.50</td> <td>9.50</td> </tr> <tr> <td>SO2</td> <td>8.50</td> <td>9.20</td> <td>9.80</td> </tr> <tr> <td>VOC</td> <td>2.26</td> <td>2.40</td> <td>2.51</td> </tr> </table>								Case Name	Case 8	Case 10	Case 12	Ambient Temp (F)	95	59	20	Evap Cooler	NO	NO	NO	Duct Firing	NO	NO	NO	Exit Temp (F)	198	194	194	Exit Velocity (ft/s)	50.1	53.1	55.4	Emissions (lb/h)				NOX	17.34	18.89	20.01	CO	37.87	41.05	43.18	PM/PM10	9.50	9.50	9.50	SO2	8.50	9.20	9.80	VOC	2.26	2.40	2.51	Short-Term Enveloped Load Representative Emissions and Stack Parameters <table border="1"> <tr> <td>Exit Temp (F)</td> <td>194.00</td> <td>363.15</td> <td>K</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>50.10</td> <td>15.27</td> <td>m/s</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>20.01</td> <td>2.52</td> <td>g/s</td> </tr> <tr> <td>CO</td> <td>43.16</td> <td>5.44</td> <td>g/s</td> </tr> <tr> <td>PM/PM10</td> <td>9.50</td> <td>1.20</td> <td>g/s</td> </tr> <tr> <td>SO2</td> <td>9.80</td> <td>1.23</td> <td>g/s</td> </tr> <tr> <td>VOC</td> <td>2.51</td> <td>0.32</td> <td>g/s</td> </tr> </table>		Exit Temp (F)	194.00	363.15	K	Exit Velocity (ft/s)	50.10	15.27	m/s	Emissions (lb/h)				NOX	20.01	2.52	g/s	CO	43.16	5.44	g/s	PM/PM10	9.50	1.20	g/s	SO2	9.80	1.23	g/s	VOC	2.51	0.32	g/s	Annualized Enveloped Load Representative Emissions and Stack Parameters (59 Degrees) <table border="1"> <tr> <td>Exit Temp (F)</td> <td>194.00</td> <td>363.15</td> <td>K</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>53.10</td> <td>16.18</td> <td>m/s</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>18.69</td> <td>2.38</td> <td>g/s</td> </tr> <tr> <td>CO</td> <td>41.05</td> <td>5.17</td> <td>g/s</td> </tr> <tr> <td>PM/PM10</td> <td>9.50</td> <td>1.20</td> <td>g/s</td> </tr> <tr> <td>SO2</td> <td>9.20</td> <td>1.16</td> <td>g/s</td> </tr> <tr> <td>VOC</td> <td>2.40</td> <td>0.30</td> <td>g/s</td> </tr> </table>		Exit Temp (F)	194.00	363.15	K	Exit Velocity (ft/s)	53.10	16.18	m/s	Emissions (lb/h)				NOX	18.69	2.38	g/s	CO	41.05	5.17	g/s	PM/PM10	9.50	1.20	g/s	SO2	9.20	1.16	g/s	VOC	2.40	0.30	g/s	Load 75 percent GE7FA <table border="1"> <tr> <th>Case Name</th> <th>Case 18</th> <th>Case 19</th> <th>Case 20</th> </tr> <tr> <td>Ambient Temp (F)</td> <td>95</td> <td>59</td> <td>20</td> </tr> <tr> <td>Evap Cooler</td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> <tr> <td>Duct Firing</td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> <tr> <td>Exit Temp (F)</td> <td>259</td> <td>255</td> <td>255</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>54.8</td> <td>56.9</td> <td>58.9</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>82.81</td> <td>91.21</td> <td>96.65</td> </tr> <tr> <td>CO</td> <td>49.21</td> <td>51.94</td> <td>53.79</td> </tr> <tr> <td>PM/PM10</td> <td>17.90</td> <td>17.90</td> <td>17.90</td> </tr> <tr> <td>SO2</td> <td>9.88</td> <td>10.68</td> <td>11.51</td> </tr> <tr> <td>VOC</td> <td>5.64</td> <td>5.89</td> <td>6.09</td> </tr> </table>								Case Name	Case 18	Case 19	Case 20	Ambient Temp (F)	95	59	20	Evap Cooler	NO	NO	NO	Duct Firing	NO	NO	NO	Exit Temp (F)	259	255	255	Exit Velocity (ft/s)	54.8	56.9	58.9	Emissions (lb/h)				NOX	82.81	91.21	96.65	CO	49.21	51.94	53.79	PM/PM10	17.90	17.90	17.90	SO2	9.88	10.68	11.51	VOC	5.64	5.89	6.09	Short-Term Enveloped Load Representative Emissions and Stack Parameters <table border="1"> <tr> <td>Exit Temp (F)</td> <td>255.00</td> <td>397.04</td> <td>K</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>54.80</td> <td>16.70</td> <td>m/s</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>96.65</td> <td>12.18</td> <td>g/s</td> </tr> <tr> <td>CO</td> <td>53.79</td> <td>6.78</td> <td>g/s</td> </tr> <tr> <td>PM/PM10</td> <td>17.90</td> <td>2.28</td> <td>g/s</td> </tr> <tr> <td>SO2</td> <td>11.51</td> <td>1.45</td> <td>g/s</td> </tr> <tr> <td>VOC</td> <td>6.09</td> <td>0.77</td> <td>g/s</td> </tr> </table>		Exit Temp (F)	255.00	397.04	K	Exit Velocity (ft/s)	54.80	16.70	m/s	Emissions (lb/h)				NOX	96.65	12.18	g/s	CO	53.79	6.78	g/s	PM/PM10	17.90	2.28	g/s	SO2	11.51	1.45	g/s	VOC	6.09	0.77	g/s	Annualized Enveloped Load Representative Emissions and Stack Parameters (59 Degrees) <table border="1"> <tr> <td>Exit Temp (F)</td> <td>255.00</td> <td>397.04</td> <td>K</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>56.90</td> <td>17.34</td> <td>m/s</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>10.41</td> <td>1.31</td> <td>g/s</td> </tr> <tr> <td>CO</td> <td>5.93</td> <td>0.75</td> <td>g/s</td> </tr> <tr> <td>PM/PM10</td> <td>2.04</td> <td>0.28</td> <td>g/s</td> </tr> <tr> <td>SO2</td> <td>1.24</td> <td>0.16</td> <td>g/s</td> </tr> <tr> <td>VOC</td> <td>0.67</td> <td>0.08</td> <td>g/s</td> </tr> </table>		Exit Temp (F)	255.00	397.04	K	Exit Velocity (ft/s)	56.90	17.34	m/s	Emissions (lb/h)				NOX	10.41	1.31	g/s	CO	5.93	0.75	g/s	PM/PM10	2.04	0.28	g/s	SO2	1.24	0.16	g/s	VOC	0.67	0.08	g/s	Load 75 percent <table border="1"> <tr> <th>Case Name</th> <th>Case 18</th> <th>Case 19</th> <th>Case 20</th> </tr> <tr> <td>Ambient Temp (F)</td> <td>95</td> <td>59</td> <td>20</td> </tr> <tr> <td>Evap Cooler</td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> <tr> <td>Duct Firing</td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> <tr> <td>Exit Temp (F)</td> <td>252</td> <td>250</td> <td>250</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>46.5</td> <td>47.9</td> <td>48.6</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>65.62</td> <td>71.78</td> <td>75.46</td> </tr> <tr> <td>CO</td> <td>77.09</td> <td>67.08</td> <td>58.96</td> </tr> <tr> <td>PM/PM10</td> <td>17.90</td> <td>17.90</td> <td>17.90</td> </tr> <tr> <td>SO2</td> <td>7.81</td> <td>8.55</td> <td>6.99</td> </tr> <tr> <td>VOC</td> <td>4.84</td> <td>4.99</td> <td>5.08</td> </tr> </table>		Case Name	Case 18	Case 19	Case 20	Ambient Temp (F)	95	59	20	Evap Cooler	NO	NO	NO	Duct Firing	NO	NO	NO	Exit Temp (F)	252	250	250	Exit Velocity (ft/s)	46.5	47.9	48.6	Emissions (lb/h)				NOX	65.62	71.78	75.46	CO	77.09	67.08	58.96	PM/PM10	17.90	17.90	17.90	SO2	7.81	8.55	6.99	VOC	4.84	4.99	5.08	Short-Term Enveloped Load Representative Emissions and Stack Parameters <table border="1"> <tr> <td>Exit Temp (F)</td> <td>250.00</td> <td>394.26</td> <td>K</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>46.50</td> <td>14.17</td> <td>m/s</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>75.46</td> <td>9.51</td> <td>g/s</td> </tr> <tr> <td>CO</td> <td>77.09</td> <td>9.71</td> <td>g/s</td> </tr> <tr> <td>PM/PM10</td> <td>17.90</td> <td>2.28</td> <td>g/s</td> </tr> <tr> <td>SO2</td> <td>8.99</td> <td>1.13</td> <td>g/s</td> </tr> <tr> <td>VOC</td> <td>5.08</td> <td>0.64</td> <td>g/s</td> </tr> </table>		Exit Temp (F)	250.00	394.26	K	Exit Velocity (ft/s)	46.50	14.17	m/s	Emissions (lb/h)				NOX	75.46	9.51	g/s	CO	77.09	9.71	g/s	PM/PM10	17.90	2.28	g/s	SO2	8.99	1.13	g/s	VOC	5.08	0.64	g/s	Annualized Enveloped Load Representative Emissions and Stack Parameters (59 Degrees) <table border="1"> <tr> <td>Exit Temp (F)</td> <td>250.00</td> <td>394.26</td> <td>K</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>47.90</td> <td>14.60</td> <td>m/s</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>8.19</td> <td>1.03</td> <td>g/s</td> </tr> <tr> <td>CO</td> <td>7.88</td> <td>0.96</td> <td>g/s</td> </tr> <tr> <td>PM/PM10</td> <td>2.04</td> <td>0.28</td> <td>g/s</td> </tr> <tr> <td>SO2</td> <td>0.98</td> <td>0.12</td> <td>g/s</td> </tr> <tr> <td>VOC</td> <td>0.57</td> <td>0.07</td> <td>g/s</td> </tr> </table>		Exit Temp (F)	250.00	394.26	K	Exit Velocity (ft/s)	47.90	14.60	m/s	Emissions (lb/h)				NOX	8.19	1.03	g/s	CO	7.88	0.96	g/s	PM/PM10	2.04	0.28	g/s	SO2	0.98	0.12	g/s	VOC	0.57	0.07	g/s	Load 50 percent <table border="1"> <tr> <th>Case Name</th> <th>Case 9</th> <th>Case 11</th> <th>Case 13</th> </tr> <tr> <td>Ambient Temp (F)</td> <td>95</td> <td>59</td> <td>20</td> </tr> <tr> <td>Evap Cooler</td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> <tr> <td>Duct Firing</td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> <tr> <td>Exit Temp (F)</td> <td>190</td> <td>185</td> <td>185</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>41.8</td> <td>43.4</td> <td>44.9</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>13.99</td> <td>15.18</td> <td>15.98</td> </tr> <tr> <td>CO</td> <td>31.79</td> <td>34.12</td> <td>35.53</td> </tr> <tr> <td>PM/PM10</td> <td>9.50</td> <td>9.50</td> <td>9.50</td> </tr> <tr> <td>SO2</td> <td>6.80</td> <td>7.40</td> <td>7.80</td> </tr> <tr> <td>VOC</td> <td>1.90</td> <td>1.99</td> <td>2.06</td> </tr> </table>		Case Name	Case 9	Case 11	Case 13	Ambient Temp (F)	95	59	20	Evap Cooler	NO	NO	NO	Duct Firing	NO	NO	NO	Exit Temp (F)	190	185	185	Exit Velocity (ft/s)	41.8	43.4	44.9	Emissions (lb/h)				NOX	13.99	15.18	15.98	CO	31.79	34.12	35.53	PM/PM10	9.50	9.50	9.50	SO2	6.80	7.40	7.80	VOC	1.90	1.99	2.06	Short-Term Enveloped Load Representative Emissions and Stack Parameters <table border="1"> <tr> <td>Exit Temp (F)</td> <td>185.00</td> <td>358.15</td> <td>K</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>41.80</td> <td>12.66</td> <td>m/s</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>15.98</td> <td>2.01</td> <td>g/s</td> </tr> <tr> <td>CO</td> <td>35.53</td> <td>4.48</td> <td>g/s</td> </tr> <tr> <td>PM/PM10</td> <td>9.50</td> <td>1.20</td> <td>g/s</td> </tr> <tr> <td>SO2</td> <td>7.80</td> <td>0.98</td> <td>g/s</td> </tr> <tr> <td>VOC</td> <td>2.06</td> <td>0.28</td> <td>g/s</td> </tr> </table>		Exit Temp (F)	185.00	358.15	K	Exit Velocity (ft/s)	41.80	12.66	m/s	Emissions (lb/h)				NOX	15.98	2.01	g/s	CO	35.53	4.48	g/s	PM/PM10	9.50	1.20	g/s	SO2	7.80	0.98	g/s	VOC	2.06	0.28	g/s	Annualized Enveloped Load Representative Emissions and Stack Parameters (59 Degrees) <table border="1"> <tr> <td>Exit Temp (F)</td> <td>185.00</td> <td>358.15</td> <td>K</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>43.40</td> <td>13.23</td> <td>m/s</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>15.18</td> <td>1.91</td> <td>g/s</td> </tr> <tr> <td>CO</td> <td>34.12</td> <td>4.30</td> <td>g/s</td> </tr> <tr> <td>PM/PM10</td> <td>9.50</td> <td>1.20</td> <td>g/s</td> </tr> <tr> <td>SO2</td> <td>7.40</td> <td>0.93</td> <td>g/s</td> </tr> <tr> <td>VOC</td> <td>1.99</td> <td>0.25</td> <td>g/s</td> </tr> </table>		Exit Temp (F)	185.00	358.15	K	Exit Velocity (ft/s)	43.40	13.23	m/s	Emissions (lb/h)				NOX	15.18	1.91	g/s	CO	34.12	4.30	g/s	PM/PM10	9.50	1.20	g/s	SO2	7.40	0.93	g/s	VOC	1.99	0.25	g/s	Load 50 percent GE7FA <table border="1"> <tr> <th>Case Name</th> <th>Case 21</th> <th>Case 22</th> <th>Case 23</th> </tr> <tr> <td>Ambient Temp (F)</td> <td>95</td> <td>59</td> <td>20</td> </tr> <tr> <td>Evap Cooler</td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> <tr> <td>Duct Firing</td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> <tr> <td>Exit Temp (F)</td> <td>252</td> <td>250</td> <td>250</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>46.5</td> <td>47.9</td> <td>48.6</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>65.62</td> <td>71.78</td> <td>75.46</td> </tr> <tr> <td>CO</td> <td>77.09</td> <td>67.08</td> <td>58.96</td> </tr> <tr> <td>PM/PM10</td> <td>17.90</td> <td>17.90</td> <td>17.90</td> </tr> <tr> <td>SO2</td> <td>7.81</td> <td>8.55</td> <td>6.99</td> </tr> <tr> <td>VOC</td> <td>4.84</td> <td>4.99</td> <td>5.08</td> </tr> </table>		Case Name	Case 21	Case 22	Case 23	Ambient Temp (F)	95	59	20	Evap Cooler	NO	NO	NO	Duct Firing	NO	NO	NO	Exit Temp (F)	252	250	250	Exit Velocity (ft/s)	46.5	47.9	48.6	Emissions (lb/h)				NOX	65.62	71.78	75.46	CO	77.09	67.08	58.96	PM/PM10	17.90	17.90	17.90	SO2	7.81	8.55	6.99	VOC	4.84	4.99	5.08	Short-Term Enveloped Load Representative Emissions and Stack Parameters <table border="1"> <tr> <td>Exit Temp (F)</td> <td>250.00</td> <td>394.26</td> <td>K</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>46.50</td> <td>14.17</td> <td>m/s</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>75.46</td> <td>9.51</td> <td>g/s</td> </tr> <tr> <td>CO</td> <td>77.09</td> <td>9.71</td> <td>g/s</td> </tr> <tr> <td>PM/PM10</td> <td>17.90</td> <td>2.28</td> <td>g/s</td> </tr> <tr> <td>SO2</td> <td>8.99</td> <td>1.13</td> <td>g/s</td> </tr> <tr> <td>VOC</td> <td>5.08</td> <td>0.64</td> <td>g/s</td> </tr> </table>		Exit Temp (F)	250.00	394.26	K	Exit Velocity (ft/s)	46.50	14.17	m/s	Emissions (lb/h)				NOX	75.46	9.51	g/s	CO	77.09	9.71	g/s	PM/PM10	17.90	2.28	g/s	SO2	8.99	1.13	g/s	VOC	5.08	0.64	g/s	Annualized Enveloped Load Representative Emissions and Stack Parameters (59 Degrees) <table border="1"> <tr> <td>Exit Temp (F)</td> <td>250.00</td> <td>394.26</td> <td>K</td> </tr> <tr> <td>Exit Velocity (ft/s)</td> <td>47.90</td> <td>14.60</td> <td>m/s</td> </tr> <tr> <td>Emissions (lb/h)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOX</td> <td>8.19</td> <td>1.03</td> <td>g/s</td> </tr> <tr> <td>CO</td> <td>7.88</td> <td>0.96</td> <td>g/s</td> </tr> <tr> <td>PM/PM10</td> <td>2.04</td> <td>0.28</td> <td>g/s</td> </tr> <tr> <td>SO2</td> <td>0.98</td> <td>0.12</td> <td>g/s</td> </tr> <tr> <td>VOC</td> <td>0.57</td> <td>0.07</td> <td>g/s</td> </tr> </table>		Exit Temp (F)	250.00	394.26	K	Exit Velocity (ft/s)	47.90	14.60	m/s	Emissions (lb/h)				NOX	8.19	1.03	g/s	CO	7.88	0.96	g/s	PM/PM10	2.04	0.28	g/s	SO2	0.98	0.12	g/s	VOC	0.57	0.07	g/s
Case Name	Case 8	Case 10	Case 12																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Ambient Temp (F)	95	59	20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Evap Cooler	NO	NO	NO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Duct Firing	NO	NO	NO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Temp (F)	198	194	194																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Velocity (ft/s)	50.1	53.1	55.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
NOX	17.34	18.89	20.01																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CO	37.87	41.05	43.18																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
PM/PM10	9.50	9.50	9.50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
SO2	8.50	9.20	9.80																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
VOC	2.26	2.40	2.51																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Temp (F)	194.00	363.15	K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Velocity (ft/s)	50.10	15.27	m/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
NOX	20.01	2.52	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CO	43.16	5.44	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
PM/PM10	9.50	1.20	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
SO2	9.80	1.23	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
VOC	2.51	0.32	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Temp (F)	194.00	363.15	K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Velocity (ft/s)	53.10	16.18	m/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
NOX	18.69	2.38	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CO	41.05	5.17	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
PM/PM10	9.50	1.20	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
SO2	9.20	1.16	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
VOC	2.40	0.30	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Case Name	Case 18	Case 19	Case 20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Ambient Temp (F)	95	59	20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Evap Cooler	NO	NO	NO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Duct Firing	NO	NO	NO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Temp (F)	259	255	255																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Velocity (ft/s)	54.8	56.9	58.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
NOX	82.81	91.21	96.65																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CO	49.21	51.94	53.79																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
PM/PM10	17.90	17.90	17.90																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
SO2	9.88	10.68	11.51																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
VOC	5.64	5.89	6.09																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Temp (F)	255.00	397.04	K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Velocity (ft/s)	54.80	16.70	m/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
NOX	96.65	12.18	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CO	53.79	6.78	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
PM/PM10	17.90	2.28	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
SO2	11.51	1.45	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
VOC	6.09	0.77	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Temp (F)	255.00	397.04	K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Velocity (ft/s)	56.90	17.34	m/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
NOX	10.41	1.31	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CO	5.93	0.75	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
PM/PM10	2.04	0.28	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
SO2	1.24	0.16	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
VOC	0.67	0.08	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Case Name	Case 18	Case 19	Case 20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Ambient Temp (F)	95	59	20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Evap Cooler	NO	NO	NO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Duct Firing	NO	NO	NO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Temp (F)	252	250	250																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Velocity (ft/s)	46.5	47.9	48.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
NOX	65.62	71.78	75.46																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CO	77.09	67.08	58.96																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
PM/PM10	17.90	17.90	17.90																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
SO2	7.81	8.55	6.99																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
VOC	4.84	4.99	5.08																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Temp (F)	250.00	394.26	K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Velocity (ft/s)	46.50	14.17	m/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
NOX	75.46	9.51	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CO	77.09	9.71	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
PM/PM10	17.90	2.28	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
SO2	8.99	1.13	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
VOC	5.08	0.64	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Temp (F)	250.00	394.26	K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Velocity (ft/s)	47.90	14.60	m/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
NOX	8.19	1.03	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CO	7.88	0.96	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
PM/PM10	2.04	0.28	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
SO2	0.98	0.12	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
VOC	0.57	0.07	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Case Name	Case 9	Case 11	Case 13																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Ambient Temp (F)	95	59	20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Evap Cooler	NO	NO	NO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Duct Firing	NO	NO	NO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Temp (F)	190	185	185																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Velocity (ft/s)	41.8	43.4	44.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
NOX	13.99	15.18	15.98																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CO	31.79	34.12	35.53																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
PM/PM10	9.50	9.50	9.50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
SO2	6.80	7.40	7.80																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
VOC	1.90	1.99	2.06																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Temp (F)	185.00	358.15	K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Velocity (ft/s)	41.80	12.66	m/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
NOX	15.98	2.01	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CO	35.53	4.48	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
PM/PM10	9.50	1.20	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
SO2	7.80	0.98	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
VOC	2.06	0.28	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Temp (F)	185.00	358.15	K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Velocity (ft/s)	43.40	13.23	m/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
NOX	15.18	1.91	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CO	34.12	4.30	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
PM/PM10	9.50	1.20	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
SO2	7.40	0.93	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
VOC	1.99	0.25	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Case Name	Case 21	Case 22	Case 23																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Ambient Temp (F)	95	59	20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Evap Cooler	NO	NO	NO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Duct Firing	NO	NO	NO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Temp (F)	252	250	250																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Velocity (ft/s)	46.5	47.9	48.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
NOX	65.62	71.78	75.46																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CO	77.09	67.08	58.96																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
PM/PM10	17.90	17.90	17.90																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
SO2	7.81	8.55	6.99																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
VOC	4.84	4.99	5.08																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Temp (F)	250.00	394.26	K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Velocity (ft/s)	46.50	14.17	m/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
NOX	75.46	9.51	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CO	77.09	9.71	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
PM/PM10	17.90	2.28	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
SO2	8.99	1.13	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
VOC	5.08	0.64	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Temp (F)	250.00	394.26	K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Exit Velocity (ft/s)	47.90	14.60	m/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Emissions (lb/h)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
NOX	8.19	1.03	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CO	7.88	0.96	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
PM/PM10	2.04	0.28	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
SO2	0.98	0.12	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
VOC	0.57	0.07	g/s																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CCCT Operating Parameters Natural Gas Operation 8780 h/yr Lower Sulfur (0.0065%) Fuel Oil Operation 1000 h/yr																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
Notes a Performance data from the December 2000 PSD combined cycle permit application & the modified pollutant emissions from the March 2003 duct burner modification submittal. b Based on information from JEA on 1/12/04 the lower sulfur fuel oil will not have any operational impact to the turbines except lower sulfur emissions. c Annualized worst case emissions are from 100, 75, and 50% loads at annual average temperature of 59 F. d Sulfur content assumed for the Natural Gas = 2.0 grains of sulfur/100 SCF (rationed from 0.2 to 2.0 grains S/100 scf) e Assumed 100% conversion of Sulfur to SO2 for natural gas. f Sulfur content assumed for the lower sulfur distillate fuel oil = 0.0065% Sulfur (rationed from 0.05% S to 0.0065% S) g PM/PM10 emissions (as particulate) reflect front half catch excluding the effect of SO2 oxidation & SCR catalyst. h The stack parameters for the annual operating scenario for combined fuel (natural gas and fuel oil) reflect those parameters for the annualized natural gas fired case.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									

Determination of Representative Emission and Stack Parameters and Potential to Emit Calculator

Simple Cycle Operation - Natural Gas				Simple Cycle Operation - Fuel Oil				Annual Operation									
Load 100 percent GE7FA Case Name Case 1 Case 2 Case 3 Ambient Temp (F) 95 59 20 Evap Cooler NO NO NO Duct Firing NO NO NO Exit Temp (F) 1144 1116 1081 Exit Velocity (ft/s) 147.76 156.75 164 Emissions (lb/h) NOX 71.20 79.20 84.80 CO 43.00 48.00 52.00 PM/PM10 9.00 9.00 9.00 SO2 9.70 10.70 11.40 VOC 2.60 2.80 3.00				Short-Term Enveloped Load Representative Emissions and Stack Parameters Load 100 percent Exit Temp (F) 1081.00 855.93 K Exit Velocity (ft/s) 147.76 45.04 m/s Emissions (lb/h) NOX 84.80 10.68 g/s CO 52.00 6.55 g/s PM/PM10 9.00 1.13 g/s SO2 11.40 1.44 g/s VOC 3.00 0.38 g/s		Annualized Enveloped Load Representative Emissions and Stack Parameters (59 Degrees) Load 100 percent Exit Temp (F) 1116.00 875.37 K Exit Velocity (ft/s) 156.75 47.78 m/s Emissions (lb/h) NOX 42.95 5.41 g/s CO 26.03 3.28 g/s PM/PM10 4.88 0.61 g/s SO2 5.80 0.73 g/s VOC 1.52 0.19 g/s		Load 100 percent GE7FA Case Name Case 10 Case 11 Case 12 Ambient Temp (F) 95 59 20 Evap Cooler NO NO NO Duct Firing NO NO NO Exit Temp (F) 1133 1098 1068 Exit Velocity (ft/s) 151.8 161.6 168.04 Emissions (lb/h) NOX 286.00 318.00 338.00 CO 59.00 65.00 69.00 PM/PM10 17.00 17.00 17.00 SO2 11.49 12.77 13.56 VOC 2.60 3.00 3.00				Short-Term Enveloped Load Representative Emissions and Stack Parameters Load 100 percent Exit Temp (F) 1068.00 848.71 K Exit Velocity (ft/s) 151.80 46.27 m/s Emissions (lb/h) NOX 338.00 42.59 g/s CO 69.00 8.69 g/s PM/PM10 17.00 2.14 g/s SO2 13.56 1.71 g/s VOC 3.00 0.38 g/s		Annualized Enveloped Load Representative Emissions and Stack Parameters (59 Degrees) Load 100 percent Exit Temp (F) 1098.00 865.37 K Exit Velocity (ft/s) 161.60 49.26 m/s Emissions (lb/h) NOX 36.30 4.57 g/s CO 7.42 0.93 g/s PM/PM10 1.94 0.24 g/s SO2 1.46 0.18 g/s VOC 0.34 0.04 g/s		Total Annual Dual Fuel Enveloped Load Representative Emissions and Stack Parameters (59 Degrees) Load 100 percent Exit Temp (F) 1116.00 875.37 K Exit Velocity (ft/s) 156.75 47.78 m/s Emissions (lb/h) NOX 70.21 8.85 g/s CO 27.97 3.52 g/s PM/PM10 5.79 0.73 g/s SO2 6.04 0.76 g/s VOC 1.54 0.19 g/s	
Load 75 percent Case Name Case 4 Case 5 Case 6 Ambient Temp (F) 95 59 20 Evap Cooler NO NO NO Duct Firing NO NO NO Exit Temp (F) 1170 1139 1112 Exit Velocity (ft/s) 124.17 129.71 133.13 Emissions (lb/h) NOX 58.40 63.20 67.20 CO 36.00 39.00 41.00 PM/PM10 9.00 9.00 9.00 SO2 7.90 8.60 9.20 VOC 2.20 2.20 2.40				Load 75 percent Exit Temp (F) 1112.00 873.15 K Exit Velocity (ft/s) 124.17 37.85 m/s Emissions (lb/h) NOX 67.20 8.47 g/s CO 41.00 5.17 g/s PM/PM10 9.00 1.13 g/s SO2 9.20 1.16 g/s VOC 2.40 0.30 g/s		Load 75 percent Exit Temp (F) 1139.00 888.15 K Exit Velocity (ft/s) 129.71 39.54 m/s Emissions (lb/h) NOX 34.27 4.32 g/s CO 21.15 2.66 g/s PM/PM10 4.88 0.61 g/s SO2 4.66 0.59 g/s VOC 1.19 0.15 g/s		Load 75 percent GE7FA Case Name Case 13 Case 14 Case 15 Ambient Temp (F) 95 59 20 Evap Cooler NO NO NO Duct Firing NO NO NO Exit Temp (F) 1200 1194 1183 Exit Velocity (ft/s) 126.43 131.67 135.15 Emissions (lb/h) NOX 232.00 256.00 271.00 CO 47.00 50.00 51.00 PM/PM10 17.00 17.00 17.00 SO2 9.40 10.36 10.98 VOC 2.20 2.20 2.40				Load 75 percent Exit Temp (F) 1183.00 912.59 K Exit Velocity (ft/s) 126.43 38.54 m/s Emissions (lb/h) NOX 271.00 34.15 g/s CO 51.00 6.43 g/s PM/PM10 17.00 2.14 g/s SO2 10.98 1.38 g/s VOC 2.40 0.30 g/s		Load 75 percent Exit Temp (F) 1194.00 918.71 K Exit Velocity (ft/s) 131.67 40.13 m/s Emissions (lb/h) NOX 29.22 3.68 g/s CO 5.71 0.72 g/s PM/PM10 1.94 0.24 g/s SO2 1.18 0.15 g/s VOC 0.25 0.03 g/s		Load 75 percent Exit Temp (F) 1139.00 888.15 K Exit Velocity (ft/s) 129.71 39.54 m/s Emissions (lb/h) NOX 56.28 7.09 g/s CO 22.40 2.82 g/s PM/PM10 5.79 0.73 g/s SO2 4.86 0.61 g/s VOC 1.19 0.15 g/s	
Load 50 percent Case Name Case 7 Case 8 Case 9 Ambient Temp (F) 95 59 20 Evap Cooler NO NO NO Duct Firing NO NO NO Exit Temp (F) 1200 1184 1160 Exit Velocity (ft/s) 106.35 110.53 112.68 Emissions (lb/h) NOX 46.40 50.40 52.80 CO 30.00 33.00 34.00 PM/PM10 9.00 9.00 9.00 SO2 6.40 6.90 7.30 VOC 1.80 1.80 2.00				Load 50 percent Exit Temp (F) 1160.00 899.82 K Exit Velocity (ft/s) 106.35 32.42 m/s Emissions (lb/h) NOX 52.80 6.65 g/s CO 34.00 4.28 g/s PM/PM10 9.00 1.13 g/s SO2 7.30 0.92 g/s VOC 2.00 0.25 g/s		Load 50 percent Exit Temp (F) 1184.00 913.15 K Exit Velocity (ft/s) 110.53 33.69 m/s Emissions (lb/h) NOX 27.33 3.44 g/s CO 17.89 2.25 g/s PM/PM10 4.88 0.61 g/s SO2 3.74 0.47 g/s VOC 0.98 0.12 g/s		Load 50 percent GE7FA Case Name Case 16 Case 17 Case 18 Ambient Temp (F) 95 59 20 Evap Cooler NO NO NO Duct Firing NO NO NO Exit Temp (F) 1200 1200 1200 Exit Velocity (ft/s) 108.45 112.04 113.42 Emissions (lb/h) NOX 182.00 199.00 209.00 CO 74.00 63.00 57.00 PM/PM10 17.00 17.00 17.00 SO2 7.45 8.15 8.57 VOC 1.80 1.80 2.00				Load 50 percent Exit Temp (F) 1200.00 922.04 K Exit Velocity (ft/s) 108.45 33.06 m/s Emissions (lb/h) NOX 209.00 26.33 g/s CO 74.00 9.32 g/s PM/PM10 17.00 2.14 g/s SO2 8.57 1.08 g/s VOC 2.00 0.25 g/s		Load 50 percent Exit Temp (F) 1200.00 922.04 K Exit Velocity (ft/s) 112.04 34.15 m/s Emissions (lb/h) NOX 22.72 2.86 g/s CO 7.19 0.91 g/s PM/PM10 1.94 0.24 g/s SO2 0.93 0.12 g/s VOC 0.21 0.03 g/s		Load 50 percent Exit Temp (F) 1184.00 913.15 K Exit Velocity (ft/s) 110.53 33.69 m/s Emissions (lb/h) NOX 44.29 5.58 g/s CO 21.32 2.69 g/s PM/PM10 5.79 0.73 g/s SO2 3.88 0.49 g/s VOC 0.98 0.12 g/s	
SCCT Operating Parameters Total Unit Operation 4750 h/yr Natural Gas Operation 4750 h/yr Lower Sulfur (0.0065%) Fuel Oil Operation 1000 h/yr																	
Notes a Performance data from the May 1999 PSD simple cycle permit application. b Based on information from JEA on 1/12/04 the lower sulfur fuel oil will not have any operational impact to the turbines except lower sulfur emissions. c Annualized worst case emissions are from 100, 75, and 50% loads at annual average temperature of 59 F. d Sulfur content assumed for the Natural Gas = 2.0 grains of sulfur/100 SCF (ratioed from 0.2 to 2.0 grains S/100 scf) e Assumed 100% conversion of Sulfur to SO2 for natural gas. f Sulfur content assumed for the lower sulfur distillate fuel oil = 0.0065% Sulfur (ratioed from 0.05% S to 0.0065% S) g PM/PM10 emissions reflect particulate emissions as denoted in the May 1999 PSD simple cycle permit application. h VOC emissions represent 20% of the UHC emissions. i NOx emissions reflect 12 ppm and not the 10.5 ppm as indicated in the air permit. Modeling will be performed at the original application's NOx emission rate. j The stack parameters for the annual operating scenario for combined fuel (natural gas and fuel oil) reflect those parameters for the annualized natural gas fired case.																	

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> ■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. ■ Print your name and address on the reverse so that we can return the card to you. ■ Attach this card to the back of the mailpiece, or on the front if space permits. 	<p>A. Signature <input type="checkbox"/></p> <p><i>J. Richardson</i> <input type="checkbox"/></p> <p>B. Received by (Printed Name) <input type="checkbox"/> C. Date <input type="checkbox"/></p> <p><i>J. Richardson</i> APR 29</p>
<p>1. Article Addressed to:</p> <p>Mr. James M. Chandler, P.E., D.P.A. Vice President, Operation and Maintenance JEA West Church Street Jacksonville, Florida 32202</p>	<p>D. Is delivery address different from item 1? <input type="checkbox"/></p> <p>If YES, enter delivery address below: <input type="checkbox"/></p> <p>3. Service Type</p> <p><input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail</p> <p><input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for</p> <p><input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee)</p>
<p>2. Article Number (Transfer from service label)</p>	<p>7000 1670 0013 3109 9564</p>

PS Form 3811, August 2001 Domestic Return Receipt

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

OFFICIAL USE

4956
607E
E100
029T
000Z

Postage	\$	Postmark Here
Certified Fee		
Return Receipt Fee (Endorsement Required)		
Restricted Delivery Fee (Endorsement Required)		
Total Postage & Fees	\$	

Sent To *MR. James M. Chandler*

Street, Apt. No., or PO Box No. *21 West Church St.*

City, State, ZIP+4 *JACKSONVILLE, FL 32202*

PS Form 3800, May 2000 See Reverse for Instructions

THE FLORIDIA TIMES-UNION Jacksonville, FL
Affidavit of Publication

Florida Times-Union

RECEIVED
MAY 13 2004

J.E.A./ENVIRONMENTAL
ATTN: DAVE ENGLISH
21 W CHURCH ST T
JACKSONVILLE, FL 32202

BUREAU OF AIR REGULATION

REFERENCE: 0334984

R041242 Public Notice

State of Florida
County of Duval

Before the undersigned authority personally appeared Kimalette Frazier who on oath says she is a Legal Advertising Representative of The Florida Times-Union, a daily newspaper published in Jacksonville in Duval County, Florida; that the attached copy of advertisement is a legal ad published in The Florida Times-Union. Affiant further says that The Florida Times-Union is a newspaper published in Jacksonville, in Duval County, Florida, and that the newspaper has heretofore been continuously published in Duval County, Florida each day, has been entered as second class mail matter at the post office in Jacksonville, in Duval County, Florida for a period of one year preceeding the first publication of the attached copy of advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission, or refund for the purpose of securing this advertisement for publication in said newspaper.

PUBLISHED ON: 04/30

FILED ON: 05/04/04

Name: Kimalette Frazier Title: Legal Advertising R
In testimony whereof, I have hereunto set my hand and a seal, the day and year aforesaid.

NOTARY: *[Signature]*
Twillia Shipp



Notary Public, State of Florida
My comm. expires May 13, 2006
Comm. No. DD 117248

PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT MODIFICATION

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DEP File No. PSD-FL-310 (PA 00-43)

JEA

Brandy Branch Generating Station
Duval County

The Department of Environmental Protection (Department) gives notice of its intent to issue a PSD Permit Modification to Brandy Branch Generating Station, located near Baldwin City, Duval County. The permit modification clarifies the allowable fuels and associated hours of use, including providing for the use of very low sulfur oil (0.0065% sulfur). This is an existing facility, which currently combusts natural gas and 0.05% sulfur distillate fuel oil. A new determination of Best Available Control Technology (BACT) was not required. The applicant's mailing address is: 21 West Church Street, Jacksonville, FL 32202-3139.

In addition to clarifying the amount of sulfur within the natural gas which is combusted at the facility, the applicant wishes to combust distillate oil with a sulfur content (0.0065%) less than currently permitted (0.05%). In exchange for this reduction in sulfur content, the applicant requests approval for an increase in the amount of hours which distillate oil may be fired. Such a trade-off provides the Department with reasonable assurance that no significant increases of regulated pollutants will occur.

An air quality impact analysis was not required. The Department will issue the Final Permit with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of 14 (fourteen) days from the date of publication of this Public Notice of Intent to Issue PSD Permit Modification. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Florida Department of
Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Dr, Suite 4
Tallahassee, Florida, 32301
Telephone: (850) 488-1344
Fax: (850) 922-6979

Florida Department of
Environmental Protection
Northeast District
Suite 200B, 7825 Baymeadows Way
Jacksonville, Florida 32256
Telephone: (904) 448-4300

The complete project file includes the application, Draft permit, and the information submitted by the Responsible Official, exclusive of confidential records under Section 403.111, F.S. Interested persons may review specific details of this project by contacting the Administrator, North Permitting Section, at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114, for additional information.

PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT MODIFICATION

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DEP File No. PSD-FL-310 (PA 00-43)
JEA

Brandy Branch Generating Station
Duval County

The Department of Environmental Protection (Department) gives notice of its intent to issue a PSD Permit Modification to Brandy Branch Generating Station, located near Baldwin City, Duval County. The permit modification clarifies the allowable fuels and associated hours of use, including providing for the use of very low sulfur oil (0.0065% sulfur). This is an existing facility, which currently combusts natural gas and 0.05% sulfur distillate fuel oil. A new determination of Best Available Control Technology (BACT) was not required. The applicant's mailing address is: 21 West Church Street, Jacksonville, FL 32202-3139.

In addition to clarifying the amount of sulfur within the natural gas which is combusted at the facility, the applicant wishes to combust distillate oil with a sulfur content (0.0065%) less than currently permitted (0.05%). In exchange for this reduction in sulfur content, the applicant requests approval for an increase in the amount of hours which distillate oil may be fired. Such a trade-off provides the Department with reasonable assurance that no significant increases of regulated pollutants will occur.

An air quality impact analysis was not required. The Department will issue the Final Permit with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of 14 (fourteen) days from the date of publication of this Public Notice of Intent to Issue PSD Permit Modification. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Florida Department of
Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Dr, Suite 4
Tallahassee, Florida, 32301
Telephone: (850) 488-1344
Fax: (850) 922-6979

Florida Department of
Environmental Protection
Northeast District
Suite 200B, 7825 Baymeadows Way
Jacksonville, Florida 32256
Telephone: (904) 448-4300

The complete project file includes the application, Draft permit, and the information submitted by the Responsible Official, exclusive of confidential records under Section 403.111, F.S. Interested persons may review specific details of this project by contacting the Administrator, North Permitting Section, at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114, for additional information.

THE FLORIDIA TIMES-UNION Jacksonville, Fl
Affidavit of Publication

Florida Times-Union

J.E.A./ENVIRONMENTAL
ATTN: DAVE ENGLISH
21 W CHURCH ST T-8
JACKSONVILLE FL 32202

REFERENCE: 0334984
R041242 Public Notice

State of Florida
County of Duval

Before the undersigned authority personally appeared Kimalette Frazier who on oath says she is a Legal Advertising Representative of The Florida Times-Union, a daily newspaper published in Jacksonville in Duval County, Florida; that the attached copy of advertisement is a legal ad published in The Florida Times-Union. Affiant further says that The Florida Times-Union is a newspaper published in Jacksonville, in Duval County, Florida, and that the newspaper has heretofore been continuously published in Duval County, Florida each day, has been entered as second class mail matter at the post office in Jacksonville, in Duval County, Florida for a period of one year preceeding the first publication of the attached copy of advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission, or refund for the purpose of securing this advertisement for publication in said newspaper.

PUBLISHED ON: 04/30

FILED ON: 05/04/04

Name: Kimalette Frazier Title: Legal Advertising Represe
In testimony whereof, I have hereunto set my hand and affixed seal, the day and year aforesaid.

NOTARY:

TWILLA SHIPP



Notary Public, State of Florida
My comm. expires May 13, 2006
Comm. No. DD 117248

PLACE STICKER AT TOP OF ENVELOPE
TO THE RIGHT OF RETURN ADDRESS.
FOLD AT DOTTED LINE

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. James M. Chandler, P.E., D.P.A.
Vice Presidnet, Operations and
Manintenance
JEA
21 West Church Street
Jacksonville, Florida 32202

2. Article Number
(Transfer from service label)

7000 1670 0013 3109 8437

COMPLETE THIS SECTION ON DELIVERY

A. Signature Agent
J. Richardson Addressee

B. Received by (Printed Name) *J. Richardson* C. Date of Delivery *5/21/04*

D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: No

3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

PS Form 3811, August 2001

Domestic Return Receipt

102595-02-M-1540

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

OFFICIAL USE

7000 0013 3109 1670 8437

Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$

Postmark
Here

Sent To
Mr. James M. Chandler
Street, Apt. No., or PO Box No.
21 West Church Street
City, State, ZIP+4
Jacksonville, Florida 32202

PS Form 3800, May 2000

See Reverse for Instructions