

THE TRIBUNE
ST. LUCIE COUNTY, FLORIDA
 P.O. Box 69, Fort Pierce, FL 34954-0069

RECEIVED

JUN 12 2001

AFFIDAVIT OF PUBLICATION

BUREAU OF AIR REGULATION

STATE OF FLORIDA

COUNTY OF ST. LUCIE

Before the undersigned authority personally appeared, Lynn Ferraro, General Manager; Kathy LeClair, Business Manager or Dorothy Dicks, Advertising Manager of The Tribune, a daily newspaper published at

Fort Pierce in St. Lucie County, Florida; that the attached copy of advertisement was published in The Tribune in the following issues below. Affiant further says that the said Tribune is a newspaper published at Fort Pierce in said St. Lucie County, Florida and that the said newspaper has heretofore been continuously published in said St. Lucie County, Florida daily and distributed in St. Lucie County, Florida, for a period of one year next preceding the first publication of 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 the said newspaper. The Tribune has been entered as second class matter at the Post Office in Fort Pierce, St. Lucie County, Florida and has been for a period of one year next preceding the first publication of the attached copy of advertisement.

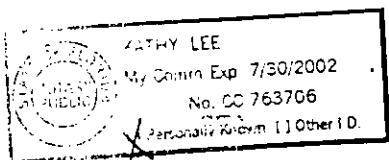
<u>Ad #</u>	<u>Name</u>	<u>Date</u>	<u>Price Per Day</u>	<u>PO #</u>
2146609	CH2M HILL	05/10/2001	\$390.04	
			Total	\$390.04

Subscribed and sworn to me before this date:

06/05/2001

Kathy LeClair

Kathy Lee
 Notary Public



*cc: Lynn Ferraro
 Dorothy Dicks
 Lynn Ferraro, CEO
 D. Worley, EPA
 G. Bernier, NPS*

PUBLIC NOTICE OF INTENT TO ISSUE PSD AIR CONSTRUCTION PERMIT
 STATE OF FLORIDA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
 Project No. 1110100-001-AC
 Draft Permit PSD-FL-302
 Duke Energy Fort Pierce, LLC
 Proposed 640 MW Simple Cycle Gas Turbine Plant
 Emissions Units 001 - 009

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit to Duke Energy Fort Pierce, LLC to construct a nominal 640 MW simple cycle gas turbine plant. The proposed plant will be located approximately one mile east of the Florida Turnpike and one-half mile north of Midway Road in St. Lucie County, Florida. The applicant plans to install eight new simple cycle gas turbine-electrical generator sets with inlet air fogging systems and necessary support equipment. Each unit is a General Electric Model PG7121(EA) gas turbine with a nominal generating capacity of 80 MW. The applicant's authorized representative is Mr. Steven F. Gilliland, Senior Vice President of Duke Energy North America. The applicant's mailing address is 5400 Westheimer Court, Houston, TX 77056-5310.

Each simple cycle gas turbine will be fired primarily with pipeline-quality natural gas and very low sulfur distillate oil as a backup fuel. Operation is restricted to an average of 2500 hours per gas turbine per year with an average of no more than 500 hours of oil firing per gas turbine per year. When firing natural gas, nitrogen oxide emissions will be minimized with dry low-NOx combustion technology. When firing very low sulfur distillate oil, nitrogen oxide emissions will be minimized with wet injection and restricted operation. Emissions of carbon monoxide, particulate matter, sulfuric acid mist, sulfur dioxide, and volatile organic compounds will be minimized by the efficient combustion of these clean fuels.

The potential emissions from this project are shown in the following table.

Pollutant	Potential Emissions (Tons Per Year)	Significant Emissions Rate (Tons Per Year)	Significant? (Table 212.400-2)	BACT Required?
CO	540	100	Yes	Yes
NOx	632	40	Yes	Yes
PM/PM10	60	25/15	Yes	Yes
SAM	.17	7	Yes	Yes
SO2	147	40	Yes	Yes
VOC	29	40	No	No

As indicated, a determination of Best Available Control Technology (BACT) was required for carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM/PM10), sulfuric acid mist (SAM) and sulfur dioxide (SO2) pursuant to Rule 62-212.400, F.A.C., the Prevention of Significant Deterioration (PSD) of Air Quality. An air quality impact analysis was conducted by the applicant and reviewed by the Department. The ambient impact analysis predicted all pollutant emissions to have an insignificant impact on Class I and Class II Areas. Emissions from the facility will not significantly contribute to or cause a violation of any state or federal ambient air quality standard. 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 and requests for public meetings concerning the proposed permit issuance action for a period of thirty (30) days from the date of publication of this Public Notice of Intent to issue Air Construction Permit. Written comments and requests for public meetings 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, F.S. 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 (14) 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), F.S. must be filed within fourteen (14) days of publication of the public notice or within fourteen (14) days of receipt of this notice of intent, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Department for notice of agency action may file a petition within fourteen (14) 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, F.A.C.

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, F.A.C.

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: The complete project file includes the application, Technical Evaluation and Preliminary Determination, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Department's reviewing engineer for this project for additional information at the address and phone numbers listed above.

Florida Department of Environmental Protection Bureau of Air Regulation (111 S. Magnolia Drive, Suite 4) 2600 Blair Stone Road, MS #5505 Tallahassee, Florida, 32399-2400 Telephone: 850/488-0114 Fax: 850/922-6979 Publish: May 10, 2001	Florida Department of Environmental Protection Southeast District Office - Air Resources (400 NORTH CONGRESS AVENUE) P.O. BOX 15425 West Palm Beach, Florida 33401 Telephone: 561/681-6600 Fax: 561/681-6790
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2148606



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

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MAY 23 2001

BUREAU OF AIR REGULATION

MAY 21 2001

4APT-ARB

Mr. A. A. Linero, P.E.
Division of Air Resources Management
FL Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Linero:

Thank you for sending the preliminary determination and draft prevention of significant deterioration (PSD) permit dated May 1, 2001, for the Duke Energy Fort Pierce, LLC project (PSD-FL-302) located in St. Lucie County, Florida. The preliminary determination is for the proposed construction and operation of a power project consisting of eight (GE 7EA) simple cycle gas combustion turbines (CTs) with a nominal generating capacity of 80 MW each. The CTs will combust pipeline quality natural gas and No. 2 distillate oil. Total emissions from the proposed project are above the thresholds requiring PSD review for nitrogen oxides (NO_x), carbon monoxide (CO), sulfur dioxide (SO₂), particulate matter (PM/PM₁₀) and sulfuric acid mist (SAM).

Based on our review of the preliminary determination and draft permit, we have the following comments:

1. The Florida Department of Environmental Protection (FDEP) proposes a NO_x emission rate of 10.5 ppmvd as best available control technology (BACT) for the combustion turbines after passing an initial "new and clean" performance test at 9 ppmvd. We recommend that FDEP consider establishing a short-term NO_x limit of 10.5 ppmvd and a long-term limit of 9 ppmvd for the life of the facility. If the Duke Energy Lake project is significantly different from other GE 7EA combustion turbine projects burning natural gas, Duke should provide clarification of why a 9 ppmvd NO_x limit can not be achieved at this facility on a long-term average basis. For your information, Duke Energy has proposed this exact same configuration (8 simple cycle GE 7EA combustion turbines) in several other states and has typically accepted a long-term limit of 9 ppmvd.
2. The draft permit provides certain exemptions during periods of startup and shutdown. The final permit should include a definition of the words startup and shutdown in terms of the observable operating conditions that indicate a period of startup and a period of shutdown.

Thank you for the opportunity to comment on the Duke Energy Fort Pierce, LLC facility preliminary determination and draft permit. If you have any questions regarding these comments, please direct them to César Zapata at (404) 562-9139.

Sincerely,



R. Douglas Neeley
Chief
Air and Radiation Technology Branch
Air, Pesticides and Toxics
Management Division

cc: J. Kaimir
C. Holladay
S. Kalamant, SED
A. Bumpah, NPS
J. Davis, ECT



Environmental Consulting & Technology, Inc.

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MAY 22 2001

May 21, 2001

BUREAU OF AIR REGULATION

Mr. Cleve Holladay
New Source Review Section
Division of Air Resources Management
Florida Department of Environmental Protection
2600 Blair Stone Road, MS # 5505
Tallahassee, Florida 32399-2400

5/24
at
File - please
return for file
about
Patt

**Re: Fort Pierce Repowering Project
Revised Dispersion Modeling Results**

Dear Mr. Holladay:

Fort Pierce Repowering Project, LLC (FPRP) is planning to construct, own, and operate a new electric power generating facility to be located at the existing Fort Pierce Utilities Authority's (FPUA) H.D. King Electric Generating Plant in Fort Pierce, St. Lucie County, Florida. The new electric generating facility is designated as FPRP CTG-1.

A Prevention of Significant Deterioration (PSD) Air Construction Permit Application for the FPRP CTG-1 project was submitted to the Department in April 2001. This application included an assessment of air quality impacts resulting from the operation of the proposed FPRP CTG-1. As previously advised, the dimensions of the building that will house FPRP CTG-1 have recently been revised. In response to your request, the dispersion modeling analysis was repeated using the revised building dimensions to assess sulfur dioxide (SO₂) impacts. Additional modeling for SO₂ was requested since prior modeling had shown project impacts to be well below the significant impact levels for the remaining pollutants.

Revised Table 7-1 (screening mode input and results), Table 7-3 (project maximum annual SO₂ impacts), Table 7-5 (project maximum 3-hour SO₂ impacts), Table 7-6 (project maximum 24-hour SO₂ impacts), Table 7-11 (highest, seconding highest 3-hour SO₂ AAQS impacts), Table 7-12 (highest, seconding highest 24-hour SO₂ AAQS impacts), Table 7-13 (highest, seconding highest 3-hour SO₂ PSD Class II impacts), and Table 7-14 (highest, seconding highest 24-hour SO₂ PSD Class II impacts) are attached for your review. The screening and refined dispersion model input and output files have been sent to you via e-mail. The additional dispersion modeling demonstrates that the changes to the FPRP CTG-1 building dimensions will result in maximum air quality impacts that are essentially the same as previously determined.

3701 Northwest
98th Street
Gainesville, FL
32606

(352)
332-0444

FAX (352)
332-6722

Mr. Cleve Holladay

May 21, 2001

Page -2-

FPRP has also removed simple cycle mode operation as an alternative operating scenario for the FPRP CTG-1 project. Revisions to the emission rate calculations (previously provided in Appendix C of the permit application) reflecting this change, as well as minor revisions to fuel heating values, are also attached.

Your continued expeditious review of the FPRP air permit application will be appreciated. Please contact me at 352/332-6230, Ext. 351 if there are any questions regarding this material.

Sincerely,

ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC



Thomas W. Davis, P.E.
Principal Engineer

cc: Mr. Scott Churbock, FPRP
Mr. Jeffery Koerner, FDEP

J. Goldman

Enclosures

B. Wootley, EPA
J. Burrell, NPS

ECT

Environmental Consulting & Technology, Inc.

**REVISED DISPERSION
MODELING RESULTS**

Table 7-1. ISC3 Model (Screening Mode) Input and Results

Revised May 2001

Case	Operating Scenario	Modeled Emission Rate (g/sec)	ISC3 Results 1-Hour Impact ($\mu\text{g}/\text{m}^3$)	NO ₂			SO ₂		
				Emission Rate ^(a) (g/sec)	Emission Rate Ratio	Maximum 1-Hr Impact ($\mu\text{g}/\text{m}^3$)	Emission Rate (g/sec)	Emission Rate Ratio	Maximum 1-Hr Impact ($\mu\text{g}/\text{m}^3$)
SS 15	Oil, 32 °F, 100% Load	1.00	3.548	3.64	3.64	12.9	12.25	12.25	43.5
SS 13	Oil, 32 °F, 100% Load, DB	1.00	3.287	3.64	3.64	12.0	12.52	12.52	41.2
SS 17	Oil, 32 °F, 75% Load	1.00	4.750	3.64	3.64	17.3	9.84	9.84	46.8
SS 9	Gas, 32 °F, 50% Load	1.00	4.761	3.64	3.64	17.4	0.82	0.82	3.9
SS 16	Oil, 59/74/95 °F, 100% Load, IAC	1.00	3.654	3.64	3.64	13.3	11.87	11.87	43.4
SS 14	Oil, 59/74/95 °F, 100% Load, IAC, DB	1.00	3.375	3.64	3.64	12.3	12.14	12.14	41.0
SS 18	Oil, 59 °F, 75% Load	1.00	4.951	3.64	3.64	18.0	9.25	9.25	45.8
SS 10	Gas, 59 °F, 50% Load	1.00	4.907	3.64	3.64	17.9	0.79	0.79	3.9
SS 19	Oil, 74 °F, 75% Load	1.00	5.070	3.64	3.64	18.5	8.95	8.95	45.4
SS 11	Gas, 74 °F, 50% Load	1.00	4.997	3.64	3.64	18.2	0.77	0.77	3.8
SS 20	Oil, 95 °F, 75% Load	1.00	5.224	3.64	3.64	19.0	8.54	8.54	44.6
SS 12	Gas, 95 °F, 50% Load	1.00	5.120	3.64	3.64	18.7	0.74	0.74	3.8
Maximums						19.0			46.8

(a) Annualized emission rate for Annual Profile B.

Table 7-1. ISC3 Model (Screening Mode) Input and Results (Continued, Page 2 of 2)

Revised May 2001

Case	Operating Scenario	Modeled Emission Rate (g/sec)	ISC3 Results 1-Hour Impact ($\mu\text{g}/\text{m}^3$)	PM/PM ₁₀			CO		
				Emission Rate (g/sec)	Emission Rate Ratio	Maximum 1-Hr Impact ($\mu\text{g}/\text{m}^3$)	Emission Rate (g/sec)	Emission Rate Ratio	Maximum 1-Hr Impact ($\mu\text{g}/\text{m}^3$)
SS 15	Oil, 32 °F, 100% Load	1.00	3.548	4.410	4.41	15.6	4.131	4.13	14.7
SS 13	Oil, 32 °F, 100% Load, DB	1.00	3.287	5.355	5.36	17.6	4.997	5.00	16.4
SS 17	Oil, 32 °F, 75% Load	1.00	4.750	3.465	3.47	16.5	3.305	3.30	15.7
SS 9	Gas, 32 °F, 50% Load	1.00	4.761	1.386	1.39	6.6	2.520	2.52	12.0
SS 16	Oil, 59/74/95 °F, 100% Load, IAC	1.00	3.654	4.410	4.41	16.1	4.131	4.13	15.1
SS 14	Oil, 59/74/95 °F, 100% Load, IAC, DB	1.00	3.375	5.355	5.36	18.1	4.779	4.78	16.1
SS 18	Oil, 59 °F, 75% Load	1.00	4.951	3.465	3.47	17.2	3.098	3.10	15.3
SS 10	Gas, 59 °F, 50% Load	1.00	4.907	1.260	1.26	6.2	2.142	2.14	10.5
SS 19	Oil, 74 °F, 75% Load	1.00	5.070	3.465	3.47	17.6	3.150	3.15	16.0
SS 11	Gas, 74 °F, 50% Load	1.00	4.997	1.260	1.26	6.3	2.142	2.14	10.7
SS 20	Oil, 95 °F, 75% Load	1.00	5.224	3.465	3.47	18.1	2.940	2.94	15.4
SS 12	Gas, 95 °F, 50% Load	1.00	5.120	1.260	1.26	6.5	2.016	2.02	10.3
Maximums						18.1			16.4

Notes: IAC = inlet air chilling.
DB = duct burner firing.

Source: ECT, 2001.

Table 7-3. ISCST3 Model Results - Maximum Annual Average SO₂ Impacts

Revised May 2001

Maximum Annual Impacts	1987	1988	1989	1990	1991
ISCST3 Impact ($\mu\text{g}/\text{m}^3$)	0.402	0.325	0.261	0.464	0.290
PSD Significant Impact ($\mu\text{g}/\text{m}^3$)	1.0	1.0	1.0	1.0	1.0
Exceed PSD Significant Impact (Y/N)	N	N	N	N	N
Percent of PSD Significant Impact (%)	40.2	32.5	26.1	46.4	29.0
Receptor UTM Easting (m)	566,553.1	566,553.1	566,553.1	566,553.1	566,553.1
Receptor UTM Northing (m)	3,036,276.3	3,036,276.3	3,036,276.3	3,036,276.3	3,036,276.3
Distance From CT (m)	229	229	229	229	229
Direction From CT (Vector °)	273	273	273	273	273

Note: Maximum impact shown in bold type.

Source: ECT, 2001.

Table 7-5. ISCST3 Model Results - Maximum 3-Hour Average SO₂ Impacts

Revised May 2001

Maximum 3-Hour Impacts	1987	1988	1989	1990	1991
ISCST3 Impact ($\mu\text{g}/\text{m}^3$)	19.28	26.61	15.12	17.71	20.37
PSD Significant Impact ($\mu\text{g}/\text{m}^3$)	25.0	25.0	25.0	25.0	25.0
Exceed PSD Significant Impact (Y/N)	N	Y	N	N	N
Percent of PSD Significant Impact (%)	77.1	106.4	60.5	70.8	81.5
Receptor UTM Easting (m)	566,553.1	566,553.1	566,553.1	566,553.1	566,553.1
Receptor UTM Northing (m)	3,036,276.3	3,036,276.3	3,036,276.3	3,036,276.3	3,036,276.3
Distance From CT (m)	229	229	229	229	229
Direction From CT (Vector °)	273	273	273	273	273
Date of Maximum Impact	11/16/87	1/31/88	1/25/89	12/27/87	12/20/91
Julian Date of Maximum Impact	320	31	25	361	354
Ending Hour of Maximum Impact	0900	0300	1500	0900	2100

Note: Maximum impact shown in bold type.

Source: ECT, 2001.

Table 7-6. ISCST3 Model Results - Maximum 24-Hour Average SO₂ Impacts

Revised May 2001

Maximum 24-Hour Impacts	1987	1988	1989	1990	1991
ISCST3 Impact (µg/m ³)	11.68	6.22	5.28	5.31	5.76
PSD Significant Impact (µg/m ³)	5.0	5.0	5.0	5.0	5.0
Exceed PSD Significant Impact (Y/N)	Y	Y	Y	Y	Y
Percent of PSD Significant Impact (%)	233.6	124.5	105.7	106.3	115.3
PSD <i>de minimis</i> Ambient Impact Threshold (µg/m ³)	13.0	13.0	13.0	13.0	13.0
Exceed PSD <i>de minimis</i> Ambient Impact (Y/N)	N	N	N	N	N
Percent of PSD <i>de minimis</i> Ambient Impact (%)	89.9	47.9	40.6	40.9	44.3
Receptor UTM Easting (m)	566,553.1	566,553.1	566,553.1	566,553.1	566,553.1
Receptor UTM Northing (m)	3,036,276.3	3,036,276.3	3,036,276.3	3,036,276.3	3,036,276.3
Distance From CT (m)	229	229	229	229	229
Direction From CT (Vector °)	273	273	273	273	273
Date of Maximum Impact	11/16/87	1/31/88	11/25/89	4/9/90	4/4/91
Julian Date of Maximum Impact	320	31	329	99	94

Note: Maximum impact shown in bold type.

Source: ECT, 2001.

Table 7-11. ISCST3 Model Results - High, Second Highest 3-Hour Average SO₂ Impacts; NAAQS Analysis

Revised May 2001

High, Second Highest 3-Hour Impacts	1987	1988	1989	1990	1991
All Source ISCST3 Impact ($\mu\text{g}/\text{m}^3$)	81.0	79.5	75.2	65.1	80.8
Background ($\mu\text{g}/\text{m}^3$)	178.0	178.0	178.0	178.0	178.0
Total Impact ($\mu\text{g}/\text{m}^3$)	259.0	257.5	253.2	243.1	258.8
NAAQS ($\mu\text{g}/\text{m}^3$)	1,300.0	1,300.0	1,300.0	1,300.0	1,300.0
Exceed NAAQS (Y/N)	N	N	N	N	N
Percent of NAAQS (%)	19.9	19.8	19.5	18.7	19.9
Receptor UTM Easting (m)	566,653.1	566,653.1	566,653.1	566,653.1	566,653.1
Receptor UTM Northing (m)	3,036,276.3	3,036,276.3	3,036,276.3	3,036,276.3	3,036,276.3
Distance From CT (m)	129	129	129	129	129
Direction From CT (Vector °)	275	275	275	275	275
Date of Maximum Impact	7/13/87	4/16/88	5/11/89	7/30/90	7/12/91
Julian Date of Maximum Impact	194	107	131	211	193
Ending Hour of Maximum Impact	1800	1200	1200	1200	1200

Note: Maximum impact shown in bold.

Source: ECT, 2001.

Table 7-12. ISCST3 Model Results - High, Second Highest 24-Hour Average SO₂ Impacts; NAAQS Analysis

Revised May 2001

High, Second Highest 24-Hour Impacts	1987	1988	1989	1990	1991
All Source ISCST3 Impact ($\mu\text{g}/\text{m}^3$)	21.1	18.8	14.0	14.6	29.9
Background ($\mu\text{g}/\text{m}^3$)	34.0	34.0	34.0	34.0	34.0
Total Impact ($\mu\text{g}/\text{m}^3$)	55.1	52.8	48.0	48.6	63.9
NAAQS ($\mu\text{g}/\text{m}^3$)	260.0	260.0	260.0	260.0	260.0
Exceed NAAQS (Y/N)	N	N	N	N	N
Percent of NAAQS (%)	21.2	20.3	18.5	18.7	24.6
Receptor UTM Easting (m)	566,653.1	566,653.1	566,653.1	566,653.1	566,653.1
Receptor UTM Northing (m)	3,036,276.3	3,036,276.3	3,036,276.3	3,036,276.3	3,036,276.3
Distance From CT (m)	129	129	129	129	129
Direction From CT (Vector °)	275	275	275	275	275
Date of Maximum Impact	8/14/87	1/10/88	12/22/89	8/4/90	2/15/91
Julian Date of Maximum Impact	226	10	356	216	46

Note: Maximum impact shown in bold.

Source: ECT, 2001.

Table 7-13. ISCST3 Model Results - High, Second Highest 3-Hour Average SO₂ Impacts; PSD Class II Analysis

Revised May 2001

High, Second Highest 3-Hour Impacts	1987	1988	1989	1990	1991
All Source ISCST3 Impact ($\mu\text{g}/\text{m}^3$)	81.0	79.5	75.2	65.1	80.8
PSD Class II Increment ($\mu\text{g}/\text{m}^3$)	512.0	512.0	512.0	512.0	512.0
Exceed PSD Class II Increment (Y/N)	N	N	N	N	N
Percent of PSD Class II Increment (%)	15.8	15.5	14.7	12.7	15.8
Receptor UTM Easting (m)	566,653.1	566,653.1	566,653.1	566,653.1	566,653.1
Receptor UTM Northing (m)	566,653.1	566,653.1	566,653.1	566,653.1	566,653.1
Distance From CT (m)	2,469,612	2,469,612	2,469,612	2,469,612	2,469,612
Direction From CT (Vector °)	180	180	180	180	180
Date of Maximum Impact	7/13/87	4/16/88	5/11/89	7/30/90	7/12/91
Julian Date of Maximum Impact	194	107	131	211	193
Ending Hour of Maximum Impact	1800	1200	1200	1200	1200

Note: Maximum impact shown in bold.

Source: ECT, 2001.

Table 7-14. ISCST3 Model Results - High, Second Highest 24-Hour Average SO₂ Impacts; PSD Class II Increment Analysis

Revised May 2001

High, Second Highest 24-Hour Impacts	1987	1988	1989	1990	1991
All Source ISCST3 Impact ($\mu\text{g}/\text{m}^3$)	21.1	18.8	14.0	14.6	29.9
PSD Class II Increment ($\mu\text{g}/\text{m}^3$)	91.0	91.0	91.0	91.0	91.0
Exceed PSD Class II Increment (Y/N)	N	N	N	N	N
Percent of PSD Class II Increment (%)	23.2	20.7	15.4	16.0	32.9
Receptor UTM Easting (m)	566,653.1	566,653.1	566,653.1	566,653.1	566,653.1
Receptor UTM Northing (m)	3,036,276.3	3,036,276.3	3,036,276.3	3,036,276.3	3,036,276.3
Distance From CT (m)	129	129	129	129	129
Direction From CT (Vector °)	275	275	275	275	275
Date of Maximum Impact	8/14/87	1/10/88	12/22/89	8/4/90	2/15/91
Julian Date of Maximum Impact	226	10	356	216	46

Note: Maximum impact shown in bold.

Source: ECT, 2001.

APPENDIX C

EMISSION RATE CALCULATIONS

**Table C-1. Ft. Pierce Utilities Authority H.D. King Plant Repowering Project
CTG Operating Scenarios - MHI 501F**

June 2001

Revised May 2001

Gas/Oil Case No.	Ambient Temperature (°F)	CTG Inlet Air Temperature (°F)	Load (%)	Steam Sales Mode	Annual Profile A (hr/yr)	Annual Profile B (hr/yr)	Inlet Air Chilling	Duct Burner Firing	Gas-Firing	Oil-Firing
SS 3/15	Winter 32.0	32.0	100	X					X	X
SS 1/13	32.0	32.0	100	X				X	X	X
SS 5/17	32.0	32.0	75	X					X	X
SS 9	32.0	32.0	50	X					X	
SS 4/16	ISO 59.0	45.0	100	X			X		X	X
SS 2/14	59.0	45.0	100	X	8,760 (G)	7,760 (G); 1,000 (O)	X	X	X	X
SS 6/18	59.0	59.0	75	X					X	X
SS 10	59.0	59.0	50	X					X	
SS 4/16	Annual Average 74.0	45.0	100	X			X		X	X
SS 2/14	74.0	45.0	100	X			X	X	X	X
SS 7/19	74.0	74.0	75	X					X	X
SS 11	74.0	74.0	50	X					X	
SS 4/16	Summer 95.0	45.0	100	X			X		X	X
SS 2/14	95.0	45.0	100	X			X	X	X	X
SS 8/20	95.0	95.0	75	X					X	X
SS 12	95.0	95.0	50	X					X	

Source: FPRP, 2001.

Table C-2B. Ft. Pierce Utilities Authority H.D. King Plant Repowering Project
MHI 501F CTG; Steam Sales; Hourly Emission Rates - Natural Gas-Firing

Temp. (°F)	Case No.	Load (%)	PM/PM ₁₀ ^(a)		SO ₂ ^(b)		H ₂ SO ₄ ^(c)		Lead ^(d)	
			(lb/hr)	(g/sec)	(lb/hr)	(g/sec)	(lb/hr)	(g/sec)	(lb/hr)	(g/sec)
32	SS 3	100	14.0	1.76	10.9	1.37	2.0	0.25	0.0305	0.00384
	SS 1	100	17.0	2.14	13.0	1.64	2.4	0.30	0.0364	0.00458
	SS 5	75	11.0	1.39	8.7	1.09	1.6	0.20	0.0243	0.00306
	SS 9	50	11.0	1.39	6.5	0.82	1.2	0.15	0.0181	0.00228
59	SS 4	100	14.0	1.76	10.9	1.37	2.0	0.25	0.0305	0.00385
	SS 2	100	17.0	2.14	13.0	1.64	2.4	0.30	0.0364	0.00459
	SS 6	75	11.0	1.39	8.3	1.05	1.5	0.19	0.0233	0.00294
	SS 10	50	10.0	1.26	6.3	0.79	1.2	0.15	0.0176	0.00222
74	SS 4	100	14.0	1.76	10.9	1.37	2.0	0.25	0.0305	0.00385
	SS 2	100	17.0	2.14	13.0	1.64	2.4	0.30	0.0364	0.00459
	SS 7	75	11.0	1.39	8.1	1.01	1.5	0.19	0.0225	0.00284
	SS 11	50	10.0	1.26	6.1	0.77	1.1	0.14	0.0171	0.00216
95	SS 4	100	14.0	1.76	10.9	1.37	2.0	0.25	0.0305	0.00385
	SS 2	100	17.0	2.14	13.0	1.64	2.4	0.30	0.0364	0.00459
	SS 8	75	11.0	1.39	7.7	0.97	1.4	0.18	0.0215	0.00271
	SS 12	50	10.0	1.26	5.9	0.74	1.1	0.14	0.0165	0.00207
Maximums			17.0	2.14	13.0	1.64	2.4	0.30	0.0364	0.00459

Temp. (°F)	Case No.	Load (%)	NO _x			CO			VOC		
			(ppmvd) ^(e)	(lb/hr)	(g/sec)	(ppmvd) ^(e)	(lb/hr)	(g/sec)	(ppmvd) ^{(e)(f)}	(lb/hr) ^(f)	(g/sec)
32	SS 3	100	3.5	20.0	2.52	3.5	13.5	1.70	2.2	3.7	0.46
	SS 1	100	3.5	23.0	2.90	3.5	14.4	1.82	2.2	5.5	0.69
	SS 5	75	3.5	16.0	2.02	3.5	9.2	1.16	2.2	3.7	0.46
	SS 9	50	3.5	11.0	1.39	10.6	20.0	2.52	22.3	24.0	3.02
59	SS 4	100	3.5	20.0	2.52	3.5	11.7	1.47	2.2	3.7	0.46
	SS 2	100	3.5	23.0	2.90	3.5	13.1	1.65	2.2	5.5	0.69
	SS 6	75	3.5	15.0	1.89	3.5	9.7	1.23	2.2	3.7	0.46
	SS 10	50	3.5	11.0	1.39	9.2	17.0	2.14	19.0	20.0	2.52
74	SS 4	100	3.5	20.0	2.52	3.5	11.7	1.47	2.2	3.7	0.46
	SS 2	100	3.5	23.0	2.90	3.5	13.1	1.65	2.2	5.5	0.69
	SS 7	75	3.5	15.0	1.89	3.5	9.7	1.23	2.2	3.7	0.46
	SS 11	50	3.5	10.0	1.26	9.2	17.0	2.14	18.9	19.0	2.39
95	SS 4	100	3.5	20.0	2.52	3.5	11.7	1.47	2.2	3.7	0.46
	SS 2	100	3.5	23.0	2.90	3.5	13.1	1.65	2.2	6.0	0.76
	SS 8	75	3.5	14.0	1.76	3.5	9.7	1.23	2.2	3.7	0.46
	SS 12	50	3.5	10.0	1.26	9.2	16.0	2.02	18.7	19.0	2.39
Maximums			3.5	23.0	2.90	10.6	20.0	2.52	22.3	24.0	3.02

^(a) As measured by EPA Reference Methods 5 or 17.

^(b) Based on natural gas sulfur content of 2.0 gr/100 ft³.

^(c) Based on 8.0% conversion of fuel S to SO₂ (CT), 4.0% conversion of SO₂ to SO₃ (SCRI), and 100% conversion of SO₃ to H₂SO₄.

^(d) AP-42, EPA, May 1998 - Draft.

^(e) Corrected to 15% O₂.

^(f) Expressed as methane.

Sources: ECT, 2001.
FPRP, 2001.

Table C-2D. Ft. Pierce Utilities Authority H.D. King Plant Repowering Project
MHI 501F CTG; Steam Sales; Hourly Emission Rates - Distillate Fuel Oil-Firing

Revised May 2001

Temp. (°F)	Case No.	Load (%)	PM/PM ₁₀ ^(a)		SO ₂ ^(b)		H ₂ SO ₄ ^(c)		Lead ^(d)	
			(lb/hr)	(g/sec)	(lb/hr)	(g/sec)	(lb/hr)	(g/sec)	(lb/hr)	(g/sec)
32	SS 15	100	35.0	4.41	97.3	12.25	14.9	1.88	0.025	0.0032
	SS 13	100	42.5	5.36	99.4	12.52	15.2	1.92	0.025	0.0032
	SS 17	75	27.5	3.47	78.1	9.84	12.0	1.51	0.020	0.0026
59	SS 16	100	35.0	4.41	94.2	11.87	14.4	1.82	0.025	0.0031
	SS 14	100	42.5	5.36	96.3	12.14	14.7	1.86	0.025	0.0031
	SS 18	75	27.5	3.47	73.4	9.25	11.2	1.42	0.019	0.0024
74	SS 16	100	35.0	4.41	94.2	11.87	14.4	1.82	0.025	0.0031
	SS 14	100	42.5	5.36	96.3	12.14	14.7	1.86	0.025	0.0031
	SS 19	75	27.5	3.47	71.0	8.95	10.9	1.37	0.019	0.0023
95	SS 16	100	35.0	4.41	94.2	11.87	14.4	1.82	0.025	0.0031
	SS 14	100	42.5	5.36	96.3	12.14	14.7	1.86	0.025	0.0031
	SS 20	75	27.5	3.47	67.8	8.54	10.4	1.31	0.018	0.0022
Maximums			42.5	5.36	99.4	12.52	15.2	1.92	0.025	0.0032

Temp. (°F)	Case No.	Load (%)	NO _x			CO			VOC		
			(ppmvd) ^(e)	(lb/hr)	(g/sec)	(ppmvd) ^(e)	(lb/hr)	(g/sec)	(ppmvd) ^{(e)(f)}	(lb/hr) ^(f)	(g/sec)
32	SS 15	100	12.0	66.0	8.32	10.0	32.8	4.13	10.0	19.3	2.43
	SS 13	100	12.0	78.0	9.83	10.0	39.7	5.00	10.0	22.0	2.77
	SS 17	75	12.0	53.0	6.68	10.0	26.2	3.30	10.0	14.9	1.88
59	SS 16	100	12.0	64.0	8.06	10.0	32.8	4.13	10.0	18.4	2.32
	SS 14	100	12.0	75.0	9.45	10.0	37.9	4.78	10.0	22.2	2.80
	SS 18	75	12.0	50.0	6.30	10.0	24.6	3.10	10.0	14.9	1.88
74	SS 16	100	12.0	64.0	8.06	10.0	32.8	4.13	10.0	18.4	2.32
	SS 14	100	12.0	75.0	9.45	10.0	37.9	4.78	10.0	22.2	2.80
	SS 19	75	12.0	49.0	6.17	10.0	25.0	3.15	10.0	13.8	1.74
95	SS 16	100	12.0	64.0	8.06	10.0	32.8	4.13	10.0	18.4	2.32
	SS 14	100	12.0	75.0	9.45	10.0	37.9	4.78	10.0	22.2	2.80
	SS 20	75	12.0	47.0	5.92	10.0	23.3	2.94	10.0	14.0	1.76
Maximums			12.0	78.0	9.83	10.0	39.7	5.00	10.0	22.2	2.80

^(a) As measured by EPA Reference Methods 5 or 17.

^(b) Based on distillate fuel oil sulfur content of 0.05-percent by weight.

^(c) Based on 6.0% conversion of fuel S to SO₂ (CT), 4.0% conversion of SO₂ to SO₃ (SCR), and 100% conversion of SO₃ to H₂SO₄.

^(d) Table 3.1-5., AP-42, EPA, April 2000.

^(e) Corrected to 15% O₂.

^(f) Expressed as methane

Sources: ECT, 2001.

FPRP, 2001.

**Table C-3A4. Ft. Pierce Utilities Authority H.D. King Plant Repowering Project
MHI 501F CTG; Hazardous Air Pollutants - Annual Profile B, Natural Gas**

Parameter	Units	Case	
		SC 4	SS 2
Maximum Hourly Fuel Flow:	10 ⁶ Btu/hr (HHV)	0.0	1,999.2
Maximum Annual Hours:	hrs/yr	0	7,760

Pollutant	Emission Factor ^{(a)(b)} (lb/10 ⁶ Btu)	Emission Rates			
		SC 4	SS 2		Annual
		(lb/hr)	(lb/hr)		(ton/yr)
1,3-Butadiene	6.05E-08	0.00000	0.00012		0.00047
Acetaldehyde	4.31E-05	0.000	0.086		0.33
Acrolein	5.60E-06	0.000	0.011		0.043
Arsenic	N/A	N/A	N/A		N/A
Benzene	1.83E-05	0.000	0.037		0.14
Beryllium	N/A	N/A	N/A		N/A
Cadmium	N/A	N/A	N/A		N/A
Chromium	N/A	N/A	N/A		N/A
Ethylbenzene	2.28E-05	0.000	0.046		0.18
Formaldehyde	1.14E-04	0.000	0.228		0.88
Lead	1.69E-05	0.000	0.034		0.13
Manganese	N/A	N/A	N/A		N/A
Mercury	7.80E-10	0.0000000	0.0000016		0.0000061
Naphthalene	6.33E-07	0.0000	0.0013		0.0049
Nickel	N/A	N/A	N/A		N/A
Polycyclic Aromatic Hydrocarbons	4.71E-07	0.00000	0.00094		0.0037
Propylene Oxide	2.86E-05	0.000	0.057		0.222
Selenium	N/A	N/A	N/A		N/A
Toluene	6.80E-05	0.000	0.136		0.53
Xylene	6.51E-05	0.000	0.130		0.50
Maximum Individual HAP		0.000	0.228		0.884
Total HAPs		0.000	0.767		2.975

^(a) - Frame Type CTs > 40 MW from EPA AP-42, Section 3.1 Database, April 2000.

^(b) - Mercury emission factor, Florida Coordinating Group (FCG), 1995.

Source: ECT, 2001.

**Table C-3A6. Ft. Pierce Utilities Authority H.D. King Plant Repowering Project
MHI 501F CTG; Hazardous Air Pollutants - Annual Profile B, Oil**

Parameter	Units	Case	
		SC 16	SS 14
Maximum Hourly Fuel Flow:	10 ⁶ Btu/hr (HHV)	0.0	1,764.0
Maximum Annual Hours:	hrs/yr	0	1,000

Pollutant	Emission Factor ^(a) (lb/10 ⁶ Btu)	Emission Rates		
		SC 16 (lb/hr)	SS 14 (lb/hr)	Annual (ton/yr)
1,3-Butadiene	1.60E-05	0.000	0.028	0.014
Acetaldehyde	N/A	N/A	N/A	N/A
Acrolein	N/A	N/A	N/A	N/A
Arsenic	1.10E-05	0.000	0.019	0.010
Benzene	5.50E-05	0.000	0.097	0.049
Beryllium	3.10E-07	0.00000	0.00055	0.00027
Cadmium	4.80E-06	0.000	0.008	0.0042
Chromium	1.10E-05	0.000	0.019	0.010
Ethylbenzene	N/A	N/A	N/A	N/A
Formaldehyde	2.80E-04	0.000	0.494	0.25
Lead	1.40E-05	0.000	0.025	0.012
Manganese	7.90E-04	0.000	1.394	0.70
Mercury	1.20E-06	0.0000	0.0021	0.0011
Naphthalene	3.50E-05	0.000	0.062	0.031
Nickel	4.60E-06	0.0000	0.0081	0.0041
Polycyclic Aromatic Hydrocarbons	4.00E-05	0.000	0.071	0.035
Propylene Oxide	N/A	N/A	N/A	N/A
Selenium	2.50E-05	0.000	0.044	0.022
Toluene	N/A	N/A	N/A	N/A
Xylene	N/A	N/A	N/A	N/A
Maximum Individual HAP		0.000	1.394	0.697
Total HAPs		0.000	2.272	1.136

^(a) - Tables 3.1-4. and 3.1-5, EPA AP-42, April 2000.

Source: ECT, 2001.

**Table C-3A7. Ft. Pierce Utilities Authority H.D. King Plant Repowering Project
Profile B - Annual Hazardous Air Pollutants Emission Rates**

Pollutant	CTG Emissions (ton/yr)
1,3-Butadiene	0.015
Acetaldehyde	0.33
Acrolein	0.043
Arsenic	0.010
Benzene	0.19
Beryllium	0.00029
Cadmium	0.0060
Chromium	0.012
Dichlorobenzene	0.0019
Ethylbenzene	0.18
Formaldehyde	1.25
Hexane	2.89
Lead	0.14
Manganese	0.70
Mercury	0.0015
Naphthalene	0.037
Nickel	0.0074
Polycyclic Aromatic Hydrocarbons	0.039
Propylene Oxide	0.22
Selenium	0.022
Toluene	0.53
Xylene	0.50
Maximum Individual HAP	2.890
Total HAPs	7.143

Source: ECT, 2001.

**Table C-3A8. Ft. Pierce Utilities Authority H.D. King Plant Repowering Project
Annual Hazardous Air Pollutants Emission Rates Summary**

Pollutant	Profile A (ton/yr)	Profile B (ton/yr)	Maximum (ton/yr)
1,3-Butadiene	0.00053	0.015	0.015
Acetaldehyde	0.38	0.33	0.38
Acrolein	0.049	0.043	0.049
Arsenic	0.00032	0.010	0.010
Benzene	0.16	0.19	0.19
Beryllium	0.000019	0.00029	0.00029
Cadmium	0.0018	0.0060	0.0060
Chromium	0.0022	0.012	0.012
Dichlorobenzene	0.0019	0.0019	0.0019
Ethylbenzene	0.20	0.18	0.20
Formaldehyde	1.12	1.25	1.25
Hexane	2.89	2.89	2.89
Lead	0.15	0.14	0.15
Manganese	0.00061	0.70	0.70
Mercury	0.00042	0.0015	0.0015
Naphthalene	0.0065	0.037	0.037
Nickel	0.0034	0.0074	0.0074
Polycyclic Aromatic Hydrocarbons	0.0043	0.039	0.039
Propylene Oxide	0.25	0.22	0.250
Selenium	0.000039	0.022	0.022
Toluene	0.60	0.53	0.60
Xylene	0.57	0.50	0.57
Maximum Individual HAP	2.890	2.890	2.890
Total HAPs	6.390	7.143	7.381

Source: ECT, 2001.

**Table C-4A1. Ft. Pierce Utilities Authority H.D. King Plant Repowering Project
MHI 501F CTG/HRSG Annual Emission Rates - Profile A
Criteria Air Pollutants and Sulfuric Acid Mist**

Source	Case No.	Fuel Type	Annual Operations (hrs/yr)	Emission Rates					
				NO _x		CO		VOC	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
CTG/HRSG	SS 2	Natural Gas	8,760	23.0	100.7	13.1	57.5	5.5	24.1
		Totals	8,760	N/A	100.7	N/A	57.5	N/A	24.1

Source	Case No.	Fuel Type	Annual Operations (hrs/yr)	Emission Rates							
				PM/PM ₁₀		SO ₂		Lead		H ₂ SO ₄	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
CTG/HRSG	SS 2	Natural Gas	8,760	17.0	74.5	13.0	56.9	0.036	0.16	2.4	10.5
		Totals	8,760	N/A	74.5	N/A	56.9	N/A	0.16	N/A	10.46

Sources: ECT, 2001.
FPRP, 2001.

**Table C-4A2. Ft. Pierce Utilities Authority H.D. King Plant Repowering Project
MHI 501F CTG Annual Emission Rates - Profile B
Criteria Air Pollutants and Sulfuric Acid Mist**

Source	Case No.	Fuel Type	Annual Operations (hrs/yr)	Emission Rates					
				NO _x		CO		VOC	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
CTG	SC 4	Natural Gas	0	173.0	0.0	42.0	0.0	8.4	0.0
CTG	SC 16	Distillate Oil	0	272.0	0.0	197.0	0.0	34.0	0.0
CTG/HRSG	SS 2	Natural Gas	7,760	23.0	89.2	13.1	50.9	5.5	21.3
CTG/HRSG	SS 14	Distillate Oil	1,000	75.0	37.5	37.9	19.0	22.2	11.1
		Totals	8,760	N/A	126.7	N/A	69.9	N/A	32.5

Source	Case No.	Fuel Type	Annual Operations (hrs/yr)	Emission Rates							
				PM/PM ₁₀		SO ₂		Lead		H ₂ SO ₄	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
CTG	SC 4	Natural Gas	0	14.0	0.0	10.9	0.0	0.031	0.00	1.3	0.0
CTG	SC 16	Distillate Oil	0	35.0	0.0	94.5	0.0	0.025	0.00	8.7	0.0
CTG/HRSG	SS 2	Natural Gas	7,760	17.0	66.0	13.0	50.4	0.036	0.14	2.4	9.3
CTG/HRSG	SS 14	Distillate Oil	1,000	42.5	21.3	96.3	48.2	0.025	0.01	14.7	7.4
		Totals	8,760	N/A	87.2	N/A	98.6	N/A	0.15	N/A	16.6

Sources: ECT, 2001.
FPRP, 2001.

**Table C-4A3. Ft. Pierce Utilities Authority H.D. King Plant Repowering Project
MHI 501F Annual Emission Rate Summary
Criteria Air Pollutants and Sulfuric Acid Mist**

Annual Profile	Annual Emissions (ton/yr)						
	NO _x	CO	VOC	PM/PM ₁₀	SO ₂	Pb	H ₂ SO ₄
A	100.7	57.5	24.1	74.5	56.9	0.16	10.5
B	126.7	69.9	32.5	87.2	98.6	0.15	16.6
Maximums	126.7	69.9	32.5	87.2	98.6	0.16	16.6

Sources: ECT, 2001.
FPRP, 2001.

**Table C-7B. Ft. Pierce Utilities Authority H.D. King Plant Repowering Project
Fuel Flow Data - MHI 501 F CTG; Steam Sales**

A. Natural Gas-Firing

Case	100% Load								75% Load			
	32 °F	32 °F	59 °F	59 °F	74 °F	74 °F	95 °F	95 °F	32 °F	59 °F	74 °F	95 °F
	SS 3	SS 1	SS 4	SS 2	SS 4	SS 2	SS 4	SS 2	SS 5	SS 6	SS 7	SS 8
Heat Input - LHV ¹ (MMBtu/hr)	1,802.9	1,802.9	1,803.8	1,803.8	1,803.8	1,803.8	1,803.8	1,803.8	1,433.4	1,379.4	1,332.0	1,271.4
Heat Input - HHV ² (MMBtu/hr)	1,998.2	1,998.2	1,999.2	1,999.2	1,999.2	1,999.2	1,999.2	1,999.2	1,588.7	1,528.8	1,476.3	1,409.1
Fuel Rate ³ (lb/hr)	86,285	86,285	86,330	86,330	86,330	86,330	86,330	86,330	68,602	66,017	63,750	60,848
Fuel Rate ⁴ (10 ⁶ ft ³ /hr)	1.907	1.907	1.908	1.908	1.908	1.908	1.908	1.908	1.516	1.459	1.409	1.345
Fuel Rate (lb/sec)	23.968	23.968	23.981	23.981	23.981	23.981	23.981	23.981	19.056	18.338	17.708	16.902

B. Distillate Fuel Oil-Firing

Case	100% Load								75% Load			
	32 °F	32 °F	59 °F	59 °F	74 °F	74 °F	95 °F	95 °F	32 °F	59 °F	74 °F	95 °F
	SS 15	SS 13	SS 16	SS 14	SS 16	SS 14	SS 16	SS 14	SS 17	SS 18	SS 19	SS 20
Heat Input - LHV ² (MMBtu/hr)	1,698.2	1,698.2	1,645.3	1,645.3	1,645.3	1,645.3	1,645.3	1,645.3	1,364.2	1,281.9	1,239.8	1,183.0
Heat Input - HHV ⁵ (MMBtu/hr)	1,820.7	1,820.7	1,764.0	1,764.0	1,764.0	1,764.0	1,764.0	1,764.0	1,462.7	1,374.5	1,329.3	1,268.4
Fuel Rate ⁶ (lb/hr)	97,260	97,260	94,231	94,231	94,231	94,231	94,231	94,231	78,133	73,421	71,010	67,756
Fuel Rate ⁷ (10 ³ gal/hr)	13.508	13.508	13.088	13.088	13.088	13.088	13.088	13.088	10.852	10.197	9.862	9.411
Fuel Rate (lb/sec)	27.017	27.017	26.175	26.175	26.175	26.175	26.175	26.175	21.704	20.395	19.725	18.821

¹ Natural gas HHV/LHV ratio of 1.10830.

² Includes 5% margin.

³ Natural gas heat content of 23,158 Btu/lb (HHV).

⁴ Natural gas density of 0.0452 lb/ft³.

⁵ Distillate fuel oil HHV/LHV ratio of 1.07216.

⁶ Distillate fuel oil heat content of 18,720 Btu/lb (HHV).

⁷ Distillate fuel oil density of 7.20 lb/gal.

Sources: ECT, 2001.
FPRP, 2001.