



300 S. ADAMS ST.
TALLAHASSEE, FL
32301-1731
850/891-0010
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talgov.com

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STEVE MEISBURG
Mayor Pro Tem

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City Manager
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Interim City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
SAM M. McCALL
City Auditor

April 13, 2002

CERTIFIED MAIL

Mr. Jeff Koerner, P.E.
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
Mail Station 5505

RECEIVED

APR 16 2002

BUREAU OF AIR REGULATION

**Re: Permit Revision Request
Unit 8 Combined Cycle Combustion Turbine and Auxiliary Boiler
Permits PSD-FL-239, 1290001-002-AC, and 1290001-003-AV**

Dear Mr. Koerner:

On November 13, 2001, the City of Tallahassee submitted a request to modify the above listed permits based on information and observations made as a result of the Unit 8 combined-cycle combustion turbine project that was recently completed. On February 5, 2002, the City received a letter from you requesting additional information to support the modifications requested. The City provided a portion of the additional information requested in a February 28, 2002, letter. This letter is submitted to FDEP to provide the balance of information requested (Items 2, 3, and 6 of the February 5, 2002, letter).

Item No. 2 - Estimated Emission Increases

As a result of the requested heat input increase, Unit 8 will have an increase in pollutant emissions that is expected to be directly proportionate. However, the annual emissions increase will not exceed the significant emission rates listed in Table 62-212.400-2, FAC. Table 1 summarizes the emission increases that will result from the increase in heat input.

An All-America City

Pollutant	Net Increase in Emissions (TPY)	PSD Significance Criterion (TPY)
Carbon Monoxide	19.52	100
Nitrogen Oxides	0	40
Sulfur Dioxide	0	40
Particulate Matter (PM10)	3.6	15
Particulate Matter (TSP)	3.6	25
Volatile Organic Compounds	4.8	40
Lead	0.004	0.6
Asbestos	0	0.007
Beryllium	0.000023	0.0004
Mercury	0.00006	0.1
Vinyl Chloride	0	1
Total Fluorides	0.069	3
Sulfuric Acid Mist	1.4	7
Total Reduced Sulfur	0	10
Reduced Sulfur Compounds	0	10
(1) – Worst-case scenario		

Item No. 3 – Unit 8 Impact on Class I Area

In the Purdom Unit 8 Site Certification Application, submitted in March of 1997, the City of Tallahassee requested a federally enforceable facility-wide cap on oxides of nitrogen (NO_x) and sulfur dioxide (SO₂) emissions as part of the Prevention of Significant Deterioration (PSD) and Title V permits. The facility-wide caps were based on a two-year average annual emission of NO_x and SO₂ documented at the plant during the five-year period preceding submission of the Site Certification Application. As part of permit revision requested on November 13, 2001, the City does not seek to amend the facility wide cap on NO_x and SO₂. Accordingly, there will be no net emissions increase in NO_x or SO₂. However, as identified in the original Site Certification Application, a net emissions increase in carbon monoxide (CO) and particulate matter (PM) is expected as part of the project. A further net emission increase would result as part of the permit revision requested on November 13, 2001. Thus, modeling impact of the CO and PM emissions on Class I areas would be appropriate.

In order to evaluate the impact of the CO and PM emissions on the Class I areas, the City used the EPA's ISC3 modeling software (version 02035) and used the preprocessed National Weather Service (NWS) meteorological data for the years 1985 to 1989 (surface data from Tallahassee Station 93805 and mixing height data from Apalachicola Station 12832). The emissions of CO and PM were modeled based on the emission rates submitted as part of the March 1997 Site Certification Application to confirm whether an impact greater than 1 µg/m³ would occur in the Class I areas. The City also modeled the impact of CO and PM emissions based on the requested maximum heat input rates to confirm whether the requested maximum heat input rate increase (the increase between the March 1997 SCA heat input rate and requested maximum heat input rate) would have an impact greater than 1 µg/m³ in Class I areas.

Based on modeling of the impact of CO and PM on the St. Marks National Wildlife Area (the only Class I area within 10 kilometers of the facility), the City has identified that the original project did exhibit an impact of greater than 1 µg/m³ of carbon monoxide on the St. Marks National Wildlife Area when firing either natural gas or fuel oil. However, the heat input rate increase requested on November 13, 2001, would not result in an additional impact of greater than 1 µg/m³ on the St. Marks National Wildlife Area.

Modeling of the impact of PM on the St. Marks National Wildlife Area, indicates that no impact of greater than 1 µg/m³ is identified based on the emission rates provided in the original Site Certification Application or the emission rates related to the requested maximum heat input rates submitted on November 13, 2001.

A copy of the model input data, output data and meteorological data can be found on the attached compact disc.

**TABLE 1
UNIT 8 IMPACT ON ST. MARKS NWA CLASS I AREA**

Pollutant	Input Data Source	Emission Rate (g/s)	Maximum Refined Concentration ($\mu\text{g}/\text{m}^3$)	Meteorological Base Year	Receptor Point	
					East (m)	North (m)
CO	Original SCA	7.06	2.09	1988	769200	3338100
	Proposed Heat Input	7.62	2.12	1988	769100	3337900
	Difference		0.03			
CO	Original SCA	24.21	6.58	1988	769100	3337900
	Proposed Heat Input	25.18	6.64	1988	769100	3337900
	Difference		0.06			
PM	Original SCA	1.14	0.337	1988	769200	3338100
	Proposed Heat Input	1.23	0.343	1988	769100	3337900
	Difference		0.006			
PM	Original SCA	2.14	0.582	1988	769100	3337900
	Proposed Heat Input	2.28	0.601	1988	769100	3337900
	Difference		0.019			

Maximum Refined Concentration is based on the following worst-case modeling scenario:

Meteorological Year: 1988

Unit Load: 50 percent capacity

Inlet Temp: 20^oF – natural gas firing

95^oF -- fuel oil firing

Item No. 6 - Auxiliary Boiler

The Auxiliary Boiler operated at the Sam O. Purdom Generating Station has been on-line since 1997. During that time, the City has recognized that the periods between bringing Unit 8 on line after an outage, or bringing Unit 7 up to 50 percent load after an outage, the facility is without a source of steam (i.e.: the City understands that when combustion is initiated in either Unit 7 or Unit 8 the auxiliary boiler must be off-line. Thus, plant auxiliary steam is absent for a number of hours until water is heated in either Unit 7 or Unit 8). Thus, the City is requesting a permit modification that would allow operation of the auxiliary boiler when either Unit 7 or Unit 8 are operating.

To facilitate this request, the City has conducted additional modeling to show the impact that operation of the auxiliary boiler with either Unit 7 or Unit 8 would have on the St. Marks National Wilderness Area in comparison to the impact that is currently permitted; the operation of units 7 and 8 simultaneously. The City has established a facility wide cap to hold constant the emissions of NO_x and SO₂ to levels that were emitted from units 5, 6, 7, GT1 and GT2 during the period from 1994 to 1996. Thus, impact modeling of these pollutants was not conducted.

To conduct the modeling, the City followed the modeling protocol developed as part of the original Site Certification Application. In summary, the City focused on the impact of particulate matter on 68 receptor points located throughout the St. Marks National Wilderness Area, including receptors spaced at 75 meter intervals along the northern boundary. A refined analysis was then conducted in the area of the receptor points exhibiting the highest predicted concentrations of the pollutant. Both the base receptor grid and refined receptor grid were modeled using meteorological data from the years 1985 through 1989. A 24-hour averaging period was used in all impact analysis.

With respect to the impact of particulate matter, modeling results indicate that the highest impact predicted for operation of the auxiliary boiler with another regulated steam generating unit at the site would be 4.58 ug/m³ and would be a result of operating the auxiliary boiler simultaneously with Unit 7. In comparison, modeling also indicates a predicted impact of 4.84 ug/m³ for the simultaneous operation of units 7 and 8.

Modeling results on carbon dioxide emissions indicated that the highest impact predicted for operation of the auxiliary boiler with another regulated steam generating unit at the site would be 6.68 ug/m³ and would be a result of operating the auxiliary boiler simultaneously with Unit 8. In comparison, modeling also indicates a predicted maximum impact of 7.75 ug/m³ for the simultaneous operation of units 7 and 8.

Table 2 presents a summary of the modeling results. Modeling input and output files are contained on the attached compact disc.

Table 3
Impact at St. Marks NWA Class I Area

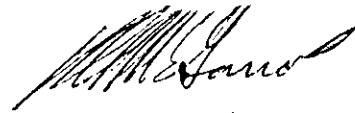
Pollutant	Averaging Time	Emission Sources	Maximum Refined Concentration (µg/m ³)	Meteorological Base Year	Receptor Point	
					East (m)	North (m)
CO	24 hr	Units 7 and 8	7.75	1988	769200	3338100
CO	24 hr	Aux Boiler and Unit 7	4.90	1986	769775	3339175
CO	24 hr	Aux Boiler and Unit 8	6.68	1988	769100	3337900
PM	24 hr	Units 7 and 8	4.84	1988	769315	3338800
PM	24 hr	Aux Boiler and Unit 7	4.58	1988	769315	3338800
PM	24 hr	Aux Boiler and Unit 8	0.86	1986	769775	3339175

Attachment 1 to this document includes the Responsible Official Certification (signed by me) and a Professional Engineer's Certification (signed by Karl Bauer). A copy of Permit No. 1290001-002-AC (auxiliary boiler construction permit) is included as Attachment 2.

As mentioned in previous communications, the City respectfully requests that a copy of the revised permit be submitted to Mr. Hamilton Oven of the Siting Office, for conformance in the Site Certification.

If you have any questions regarding the information contained in this letter or need additional information, please feel free to contact either myself at (850) 891-5534 or Ms. Jennette Curtis at (850) 891-8850.

Very Truly,



Robert McGarrah
Electric Production Manager


Attachments

cc: Hamilton (Buck) Oven, DEP
Al Linero, DEP
Scott Sheplak, DEP
Gregg Worley, EPA Region 4
John Bunyak, NPS
G. King, COT
J. Curtis, COT

Sandra Wiley, NED

ATTACHMENT 1

Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official: Robert E. McGarrah, Electric Production Manager
2. Owner/Authorized Representative or Responsible Official Mailing Address: Organization/Firm: City of Tallahassee, Electric Utility Street Address: 2602 Jackson Bluff Road City: Tallahassee State: Florida Zip Code: 32304
3. Owner/Authorized Representative or Responsible Official Telephone Numbers: Telephone: (904) 891 - 5534 Fax: (904) 891 - 5162
4. Owner/Authorized Representative or Responsible Official Statement: <i>I, the undersigned, am the owner or authorized representative* of the non-Title V source addressed in this Application for Air Permit or the responsible official, as defined in Rule 62-210.200, F.A.C., of the Title V source addressed in this application, whichever is applicable. 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. 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 any permitted emissions unit.</i>  _____ Signature 4/13/02 _____ Date

* Attach letter of authorization if not currently on file.

4. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(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

(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.

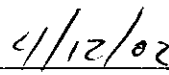
If the purpose of this application is to obtain a Title V source air operation permit (check here [X] if so), I further certify that each emissions unit described in this Application for Air Permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance schedule is submitted with this application.

If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [X] 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.

If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here [] 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.



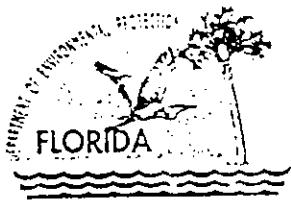
Signature



(seal)

- Attach any exception to certification statement.

ATTACHMENT 2



Department of Environmental Protection

Lawton Chiles
Governor

Northwest District
160 Governmental Center
Pensacola, Florida 32501-5794
December 6, 1996

Virginia B. Wetherell
Secretary

Robert E. McGarrah
Production Superintendent
City of Tallahassee, Electric Utility
2602 Jackson Bluff Road
Tallahassee, Florida 32304

Dear Mr. McGarrah:

On December 5, 1996, the Department issued permit 1290001-002-AC to construct an auxiliary boiler. This letter will correct an error made in that permit.

The Emission Unit number for the auxiliary boiler was listed incorrectly. The correct Emission Unit number for the auxiliary boiler is 011.

By this letter Specific Condition 13 is changed

From:

13. The emission unit covered by this permit is 1290001010. Please cite this number on all test reports and other correspondence specific to this permitted emission unit. [FAC Rule 62-297.310(8)]

To:

13. The emission unit covered by this permit is 1290001011. Please cite this number on all test reports and other correspondence specific to this permitted emission unit. [FAC Rule 62-297.310(8)]

Sincerely,

Ed K. Middleswart, P.E.
Air Program Administrator

EKM:cmc

cc: Jennette Curtis, City of Tallahassee
DEP Northwest District Branch Office, Tallahassee

RECEIVED
CITY OF TALLAHASSEE
STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF PERMIT

DEC 5 12:52

ELECTRIC UTILITIES ()
GAS UTILITIES ()
WATER UTILITIES ()
SAC

in the matter of an
Application for Permit
By:

DEP File No. 1290001-002
Wakulla County

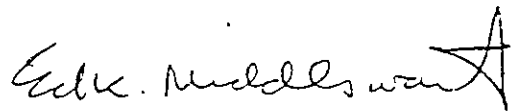
Robert E. McGarrah, Production Superintendent
City of Tallahassee, Electric Utility
2602 Jackson Bluff Road
Tallahassee, FL 32304

Enclosed is Permit Number 1290001-002-AC, issued pursuant to Section 403.087, Florida Statutes.

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

Executed in Pensacola, Florida.

State of Florida Department
of Environmental Protection



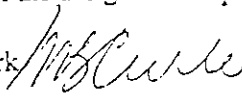
ED K. MIDDLESWART, P.E.
Director of District Management

160 Governmental Center
Pensacola, Florida 32501-5794
(904) 444-8364

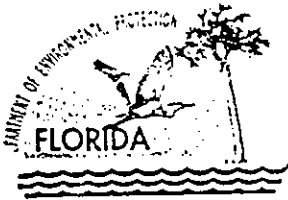
CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMIT and all copies were mailed before the close of business on December 5, 1996 to the listed persons.

FILING AND ACKNOWLEDGMENT FILED, on this date,
pursuant to §120.52(11), Florida Statutes, with the designated Department clerk,
receipt of which is hereby acknowledged.

Clerk  Date 12/5/96

Copies Furnished to:
Jennette D. Curtis, City of Tallahassee
DEP Northwest District Branch Office, Tallahassee



Department of Environmental Protection

Lawton Chiles
Governor

Northwest District
160 Governmental Center
Pensacola, Florida 32501-5794

Virginia B. Wetherell
Secretary

PERMITTEE:

City of Tallahassee
Sam O. Purdom Generating Station

AIRS I.D. Number: 1290001
Air Permit Number: 1290001-002-AC
Emission Unit: 010
Date of Issue: December 5, 1996
Expiration Date: December 31, 1997
County: Wakulla
Project: Natural Gas Fired Auxiliary Boiler

This permit is issued under the provisions of Section 403.087, Florida Statutes, and Florida Administrative Code Rules 62-296, 62-297 and 62-4. The above named applicant, hereinafter called Permittee, is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

Construction of a 16.74 MMBtu/hr natural gas fired auxiliary steam generating boiler (Kewanee, model number H3S-400-G) at the City of Tallahassee's Sam O. Purdom Generating Station.

Construction shall be consistent with the construction permit application signed September 20, 1996.

Located on the east side of State Road 363 at 667 Port Leon Drive, St. Marks

PERMITTEE:

Sam O. Purdom Generating Station

AIRS I.D. Number: 1290001

Air Permit Number: 1290001-002-AC

Emission Unit: 010

Date of Issue: December 5, 1996

Expiration Date: December 31, 1997

SPECIFIC CONDITIONS:

General

1. The attached General Conditions are part of this permit. [FAC Rule 62-4.160]

Construction

2. The Department shall be notified of the date construction of this emission unit commences postmarked no later than 30 days after such date, of the anticipated date of initial startup postmarked not more than 60 days nor less than 30 days prior to such date, and of the actual date of initial startup postmarked within 15 days after such date. [FAC Rule 62-4.070, 62.204.800(7)(d)]
3. The Department shall be notified and prior approval shall be obtained of any changes or revisions made during construction. [FAC Rule 62-4.030]

Operation

4. The maximum allowable operating rate is 16.74 MMBtu/hr heat input. [FAC Rule 62-4.070]
5. The maximum hours of operation are 2000 hours per year. The Permittee shall maintain an operation log available for Department inspection certifying the total hours of operation and fuel consumption annually. [FAC Rule 62-4.070 and construction permit application]
6. This emission unit shall only be operated as an auxiliary source of steam when the existing steam generating units (boilers 5, 6, & 7) are not operating. (Construction permit application)
7. All applicable requirements of 40 CFR 60 Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, shall be met. (FAC Rule 62-204.800)

PERMITTEE:

Sam O. Purdom Generating Station

AIRS I.D. Number: 1290001

Air Permit Number: 1290001-002-AC

Emission Unit: 010

Date of Issue: December 5, 1996

Expiration Date: December 31, 1997

SPECIFIC CONDITIONS:

Emissions

8. The maximum allowable emission limit for each pollutant is as follows:

Pollutant	FAC Rule	Allowable Emissions
VE	62-296.406	20% opacity except for one two minute period per hour during which the opacity shall not exceed 40%.

9. Excess emissions resulting from startup, shutdown or malfunction shall be allowed providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. The Permittee shall immediately notify the Department's Tallahassee Branch Office of excess emissions resulting from malfunctions. The notification shall include pertinent information as to the cause of the problem, and what steps are being taken to correct the problem and to prevent its recurrence. (Rules 62-210.700, 62-4.130)

Testing

10. Visible emissions tests are required to show compliance with the standards of the Department. The test results must provide reasonable assurance that the source is capable of compliance at the permitted maximum operating rate. [FAC Rule 62-297.310(2)] A sixty minute visible emissions tests shall be conducted in accordance with DEP method 9 within 60 days after achieving the maximum production rate at which the emission unit will be operated, but not later than 180 days after initial startup of the emission unit. The Department shall be notified at least 15 days prior to testing to allow witnessing. Results shall be submitted to the Department within 45 days after testing.

The test report shall comply with F.A.C. Rule 62-297.310(8), Test Reports.

The Department can require special compliance tests in accordance with F.A.C. Rule 62-297.310(7)(b).

Other test methods and alternate compliance procedures may be used only after prior Departmental approval has been obtained in writing.

PERMITTEE:

Sam O. Purdom Generating Station

AIRS I.D. Number: 1290001

Air Permit Number: 1290001-002-AC

Emission Unit: 010

Date of Issue: December 5, 1996

Expiration Date: December 31, 1997

SPECIFIC CONDITIONS:

[10. (cont.'d)]

Testing of emissions shall be conducted with the source operating at capacity. Capacity is defined as 90 to 100% of the maximum allowable heat input rate. If it is impractical to test at capacity, then sources may be tested at less than capacity; in this case subsequent source operation is limited to 110% of the test load until a new test is conducted. Once the unit is so limited, then operation at higher capacities is allowed for no more than fifteen days for purposes of additional compliance testing to regain the rated capacity in the permit, with prior notification to the Department. [FAC Rule 62-297.310(2)]

Administrative

11. An annual operating report for air pollutant emitting facility, DEP Form 62-210.990(5), shall be submitted by March 1 of each year. A copy of the form and instructions may be obtained from the Department of Environmental Protection, Northwest District Air Resources Management Program, (904) 444-8364. [FAC Rule 62-210.370(3)]

12. The applicant shall retain a Professional Engineer, registered in the State of Florida, for the inspection of this project. Upon completion the engineer shall inspect for conformity to the permit application and associated documents. An application for an operation permit [Form DEP 62-210.900(1), Long Form] shall be submitted with the compliance test results and appropriate fee when applicable. These are to be submitted within 105 days after achieving the maximum production rate at which the emission unit will be operated, but no later than 225 days after initial startup of the emission unit. The permittee shall obtain an operating permit for this source before the expiration of this construction permit if the permittee desires to continue operation. [FAC Rule 17-210.300]

13. The emission unit covered by this permit is 1290001010. Please cite this number on all test reports and other correspondence specific to this permitted emission unit. [FAC Rule 62-297.310(8)]

14. The Permittee, for good cause, may request that this construction permit be extended. Such a request with the required \$50 extension fee shall be submitted 60 days prior to the expiration date of this permit. (FAC Rule 17-4.080(3))

PERMITTEE:

Sam O. Purdom Generating Station

AIRS I.D. Number: 1290001

Air Permit Number: 1290001-002-AC

Emission Unit: 010

Date of Issue: December 5, 1996

Expiration Date: December 31, 1997

SPECIFIC CONDITIONS:

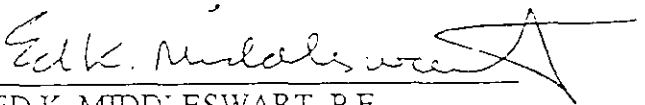
15. The Department telephone number for reporting problems, malfunctions or exceedances under this permit is (904) 444-8364, day or night, and for emergencies involving a significant threat to human health or the environment is (904) 413-9911. For routine business, telephone (904) 488-3704 during normal working hours. [FAC Rule 62-4.130]

Expiration Date:

December 31, 1997

Issued this 5th day of DEC,
1996.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION


ED K. MIDDLESWART, P.E.
Air Program Administrator

PERMITTEE:

Sam O. Purdom Generating Station

AIRS I.D. Number: 1290001

Air Permit Number: 1290001-002-AC

Emission Unit: 010

GENERAL CONDITIONS:

The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "permit conditions", and are binding and enforceable pursuant to Sections 403.141, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed and used by the permittee to achieve compliance with the conditions of this permit, are required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

PERMITTEE:

Sam O. Purdom Generating Station

AIRS I.D. Number: 1290001

Air Permit Number: 1290001-002-AC

Emission Unit: 010

GENERAL CONDITIONS:

- a. Having access to and copying any records that must be kept under the conditions of this permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and,
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

- a. A description of and cause of noncompliance; and
- b. The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, as applicable. The permittee shall be liable for any noncompliance of the permitted activity until the transfer is approved by the Department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

PERMITTEE:

AIRS I.D. Number: 1290001

Sam O. Purdom Generating Station

Air Permit Number: 1290001-002-AC

Emission Unit: 010

GENERAL CONDITIONS:

13. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurement;
- the person responsible for performing the sampling or measurement;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

14. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware the relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

City of Tallahassee, Electric Department
Sam O. Purdom Generating Station

FINAL Permit No.: 1290001-003-AV
Facility ID No.: 1290001

BACT Determination Dated October 8, 1996

BEST AVAILABLE CONTROL TECHNOLOGY (BACT) DETERMINATION
City of Tallahassee, Purdom Generating Station Auxiliary Boiler
Wakulla County

RECEIVED

The City of Tallahassee submitted a construction permit application September 23, 1996 for an auxiliary boiler to be located at their Purdom Generating Station, Wakulla County. The proposed boiler is a 16.74 MMBtu/hr natural gas fired boiler that will be used for steam only when the existing, larger steam generating units (boilers 5,6, or 7) are not operating.

JAN 27 1997

BUREAU OF
AIR REGULATION

This BACT determination is required for the source as set forth in FAC Rule 62-296.406 - Fossil Fuel Steam Generators with Less than 250 MMBtu/hr Heat Input.

BACT Determination Requested by Applicant:

Particulate matter and sulfur dioxide emissions shall be controlled by the firing of natural gas and operation of this proposed auxiliary boiler only when the existing steam generating units are not operating.

Date of Receipt of BACT Application: September 23, 1996

BACT Determination by DEP:

As requested by applicant.

BACT Determination Rationale:

Emissions will be minimal as a result of firing clean burning natural gas. Additionally, any emissions associated with this proposed auxiliary boiler will be offset by not operating the existing, larger steam generating units.

Details of the Analysis May be Obtained by Contacting:

Bob Kriegel
Department of Environmental Protection
160 Governmental Center
Pensacola, FL 32503

Recommended by:

A.S. Allen for Bob

Bob Kriegel
Environmental Specialist

Approved by:

Ed Middleswart
10/8/96

Ed Middleswart, P.E.
Air Program Administrator



ELECTRIC OPERATIONS
2602 JACKSON BLUFF RD.
TALLAHASSEE, FL 32304
850/891-5001 OFFICE
850/891-5162 FAX
talgov.com

SCOTT MADDOX
Mayor
STEVE MEISBURG
Mayor Pro Tem

JOHN PAUL BAILEY
Commissioner
CHARLES E. BILLINGS
Commissioner
DEBBIE LIGHTSEY
Commissioner

ANITA R. FAVORS
City Manager
GARY HERNDON
Interim City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
SAM M. McCALL
City Auditor

February 28, 2002

HAND DELIVERY

Mr. Jeffrey Koerner, PE
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
Mail Station 5505

RECEIVED

FEB 27 2002

BUREAU OF AIR REGULATION

**Re: Permit Revision Request
Unit 8 Combined Cycle Combustion Turbine and Auxiliary Boiler
Permits PSD-FL-239, 1290001-002-AC, and 1290001-003-AV
Site Certification PA 97-35
Sam O. Purdom Generating Station**

Dear Mr. Koerner:

The City has received FDEP's request for additional information. At this time, the City is submitting responses to items 1, 4, 5 and 7 of the request, including a professional engineer's certification of the information contained herein (see Attachment A). In addition, the City is requesting an additional 30-day period to allow for response to the remaining three items.

In response to Item No. 1, the City understands the 30-day comment period that is required for the modification to the construction permit. However, the City would like to clarify that the 8.5 percent heat input increase, while firing natural gas, is the resultant increase at ISO conditions and is based on a 4 percent increase from the current permit limit (1467.7 mmBtu/hr LHV at 95°F, 60%RH, and 14.7 psi). This increase is related to the unit achieving a higher electrical output than originally guaranteed and variations in operational characteristics over time. The increase in maximum heat input rate for fuel oil combustion was less. But, similarly, 4 percent of the requested increase from the current permit limit (1659.5 mmBtu/hr at 95°F, 60%RH, and 14.7 psi) is related to the electric output and variations over time, and the balance of the increase is related to adjustments to ISO conditions.

In response to Item No. 4, initial performance testing, as required pursuant to 40 CFR 60, was conducted at base load on September 15, 2000, while firing natural gas, and on July 4, 2001, while firing No. 2 fuel oil. The heat input rate achieved during the three test runs conducted on September 15, 2000, averaged 1553.4 mmBtu/hr HHV at an inlet temperature of 86°F, which is approximately 12.5 percent less than the requested

An All-America City

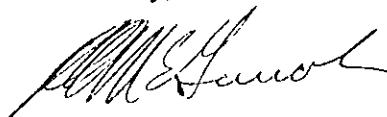
maximum heat input rate. Likewise, the heat input rate achieved during the three test runs conducted on July 4, 2001, averaged 1793.3 mmBtu/hr HHV at an inlet temperature of 78°F, which is approximately 6.9 percent less than the requested maximum heat input rate. Test data and related performance curve information is provided in Attachment B. The City recognizes that additional emission testing will be required to permit firing natural gas at the requested maximum heat input rate. However, as testing has already been completed for natural gas firing at 1553.4 mmBtu/hr HHV at 86°F, the City prefers to limit operation "by adjusting the entire heat input vs. combustor inlet temperature curve downward by an increment equal to the difference between the maximum permitted heat input (corrected for compressor inlet conditions) and 110 percent of the value reached during the test until a new test is conducted."

In response to Item No. 5, the City has compiled continuous emissions monitoring system data that represents the linked events that caused prolonged periods of high oxides of nitrogen readings. The compiled data is presented in Attachment B. A description of the linked events is provided to the right of each day's data. Please note, in order to reduce the length of Attachment C, only ten days of data are presented.

In response to Item No. 7, the City has rendered units 5 and 6 permanently inoperable. Removing reference to these units in the Title V permit would be appropriate.

If you have any questions regarding the additional information provided above, please feel free to contact either myself at (850) 891-5534 or Ms. Jennette Curtis at (850) 891-8850.

Yours truly,



R. E. McGarrah, Manager
Electric Production Division
Responsible Official

Attachments

cc: Hamilton Owen, DEP
Sandra Veazey, DEP
Al Linero, DEP
Scott Sheplak, DEP
Greg Worley, EPA
John Bunyak, NPS
G. King, COT
B. Cowart, COT
J. Curtis, COT
K. Bauer, COT

ATTACHMENT A

4. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein*, that:

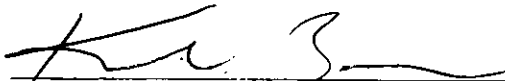
(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(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.

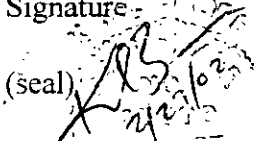
If the purpose of this application is to obtain a Title V source air operation permit (check here [X] if so), I further certify that each emissions unit described in this Application for Air Permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance schedule is submitted with this application.

If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [X] 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.

If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here [] 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.


Signature

2/27/02
Date

(seal) 

* Attach any exception to certification statement.

ATTACHMENT B

**INITIAL PERFORMANCE TEST DATA
NATURAL GAS**

Table 2. Emission Summary
Combustion Turbine Unit 8 - Gas Fired - Full Load
City of Tallahassee Sam O. Purdom Plant
Tallahassee, Florida
September 15, 2000

Run Number	Time	Oxygen %	NOx Emissions				CO Emissions			CT		SO2 lbs/hr	
			ppm	ppm 15% O2	ppm @ ISO	lbs/hr	lbs/MMBTU	ppm	lbs/hr	lbs/MMBTU	Gas Flow 100scf/hr		Heat Input MMBTUH HHV
Full Load													
1	1303-1403	13.61	10.84	8.77	10.55	50.70	0.032	0.88	2.52	0.002	15169	1568.9	0.900
2	1418-1518	13.70	10.83	8.87	11.15	50.71	0.033	0.86	2.45	0.002	15005	1552.0	0.890
3	1529-1629	13.63	10.58	8.59	10.92	48.71	0.032	0.80	2.24	0.001	14882	1539.3	0.880
Average	---	13.65	10.75	8.74	10.87	50.04	0.032	0.85	2.40	0.002	15019	1553.4	0.890

Natural Gas Fd-Factor = 8710 MMBTU/dscf

lbs/hr = ppm(2.595 x 10⁻⁹)MW (20.9/20.9-%O2)(Fd)(Heat Input HHV)

MW NOx = 46 lbs/lb-mole

MW CO = 28 lbs/lb-mole

Allowable Emissions

NOx = 12 ppmvd @ 15%O2

CO = 25 ppmvd

Heat Input HHV = (gas flow)(gross calorific value)/10E06

September 15, 2000.
Purdom Unit 8 Combustion Turbine
compressor inlet temperature during
stack testing.

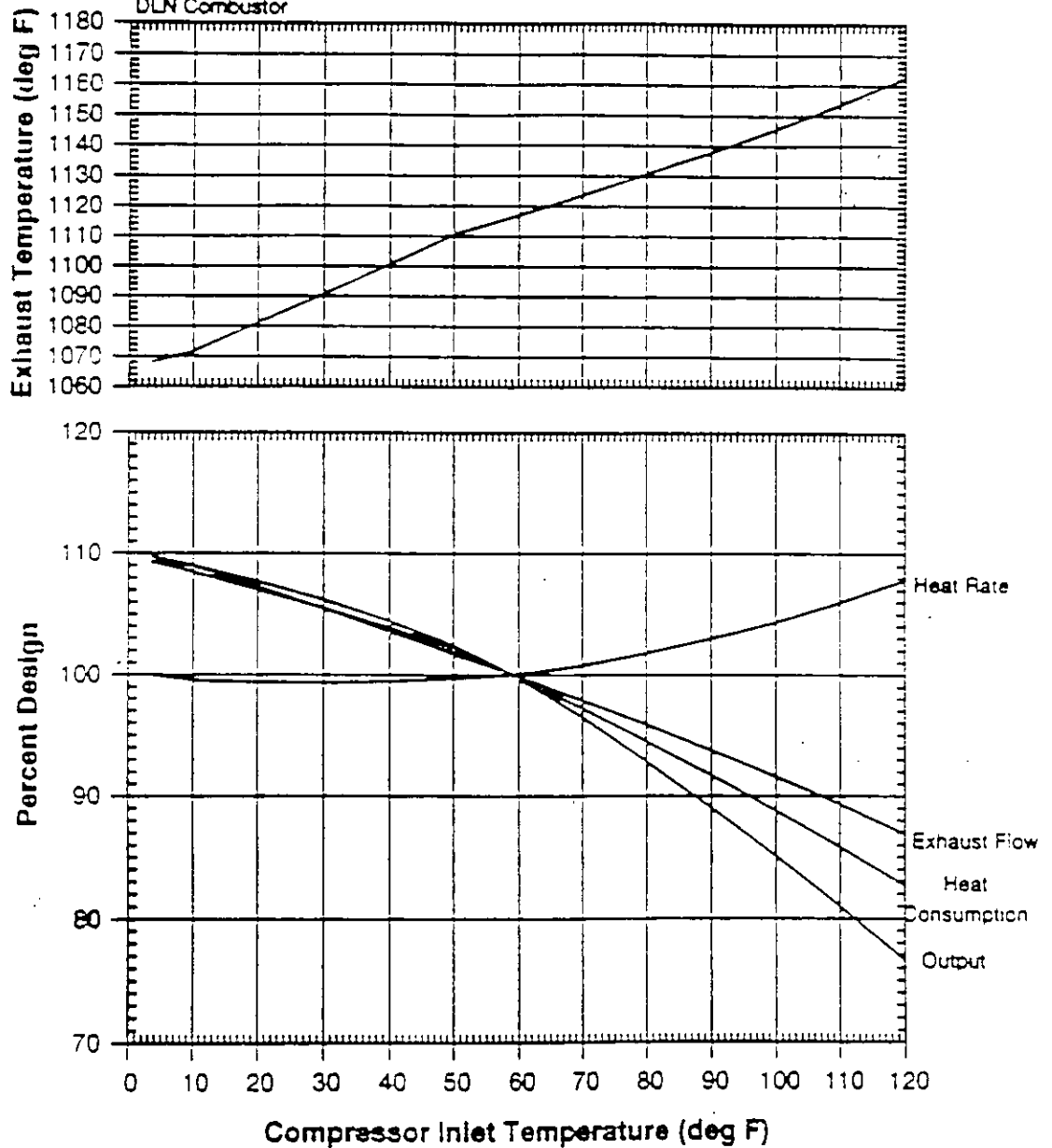
TIME	TEMP °F
13:00	86
13:05	86
13:10	86
13:15	86
13:20	87
13:25	87
13:30	87
13:35	87
13:40	87
13:45	87
13:50	87
13:55	86
14:00	87
14:05	87
14:10	86
14:15	86
14:20	85
14:25	85
14:30	85
14:35	85
14:40	85
14:45	85
14:50	86
14:55	85
15:00	85

TIME	TEMP °F
15:05	86
15:10	86
15:15	85
15:20	85
15:25	86
15:30	85
15:35	86
15:40	86
15:45	87
15:50	86
15:55	86
16:00	86
16:05	86
16:10	85
16:15	86
16:20	85
16:25	85
16:30	85
16:35	85
16:40	85
16:45	85
16:50	85
16:55	85
17:00	86

GENERAL ELECTRIC MODEL PG7241(FA) GAS TURBINE

Effect of Compressor Inlet Temperature on
Output, Heat Rate, Heat Consumption, Exhaust Flow
And Exhaust Temperature at Baseload

Fuel: Methane
Design Values on Curve 522HA851 Rev 0
DLN Combustor



F. Brooks
1/24/97

522HA852
Rev - 0

WEB

INITIAL PERFORMANCE TEST DATA
No. 2 FUEL OIL

**Table 1. Emission Summary
 Combustion Turbine Unit 8 - Oil Fired
 City of Tallahassee Sam O. Purdom Plant
 Tallahassee, Florida
 July 3 and 4, 2001**

Run Number	Time	Oxygen %	NOx Emissions					CO Emissions			CT	Heat Input MMBTUH HHV	SO2 lbs/hr
			ppm	ppm 15% O2	ppm @ ISO	lbs/hr	lbs/MMBTU	ppm	lbs/hr	lbs/MMBTU	Oil Flow lbs/hr		
Low Load - 60 MW Runs 1 & 2 (7/3/01), 65 MW Run 3 (7/4/01)													
1	0816-0851	13.67	46.88	38.26	48.67	136.45	0.149	1.26	2.23	0.0024	47261	917.8	37.81
2	0905-0948	13.69	48.48	39.67	46.88	141.24	0.154	1.07	1.90	0.0021	47176	916.2	37.74
3	0812-0848	13.42	43.30	34.15	40.35	128.75	0.133	1.22	2.21	0.0023	49953	970.1	39.96
Average	---	13.59	46.22	37.36	45.30	135.48	0.145	1.18	2.11	0.0023	48130	934.7	38.50
Base Load - 168 MW (7/4/01)													
1	0929-1029	12.42	50.60	35.21	44.16	245.79	0.137	1.44	4.26	0.0024	92514	1796.6	74.01
2	1054-1154	12.49	51.85	36.38	43.92	252.90	0.141	1.38	4.10	0.0023	92129	1789.2	73.70
3	1215-1315	12.44	52.02	36.28	43.81	252.94	0.141	1.04	3.08	0.0017	92386	1794.1	73.91
Average	---	12.45	51.49	35.95	43.96	250.54	0.140	1.29	3.81	0.0021	92343	1793.3	73.87

Fuel Oil F Factor = 9190 dscf/MMBTU

lbs/hr = ppm(2.595 x 10⁻⁹)MW (20.9/20.9-%O2)(Fd)(Heat Input HHV)

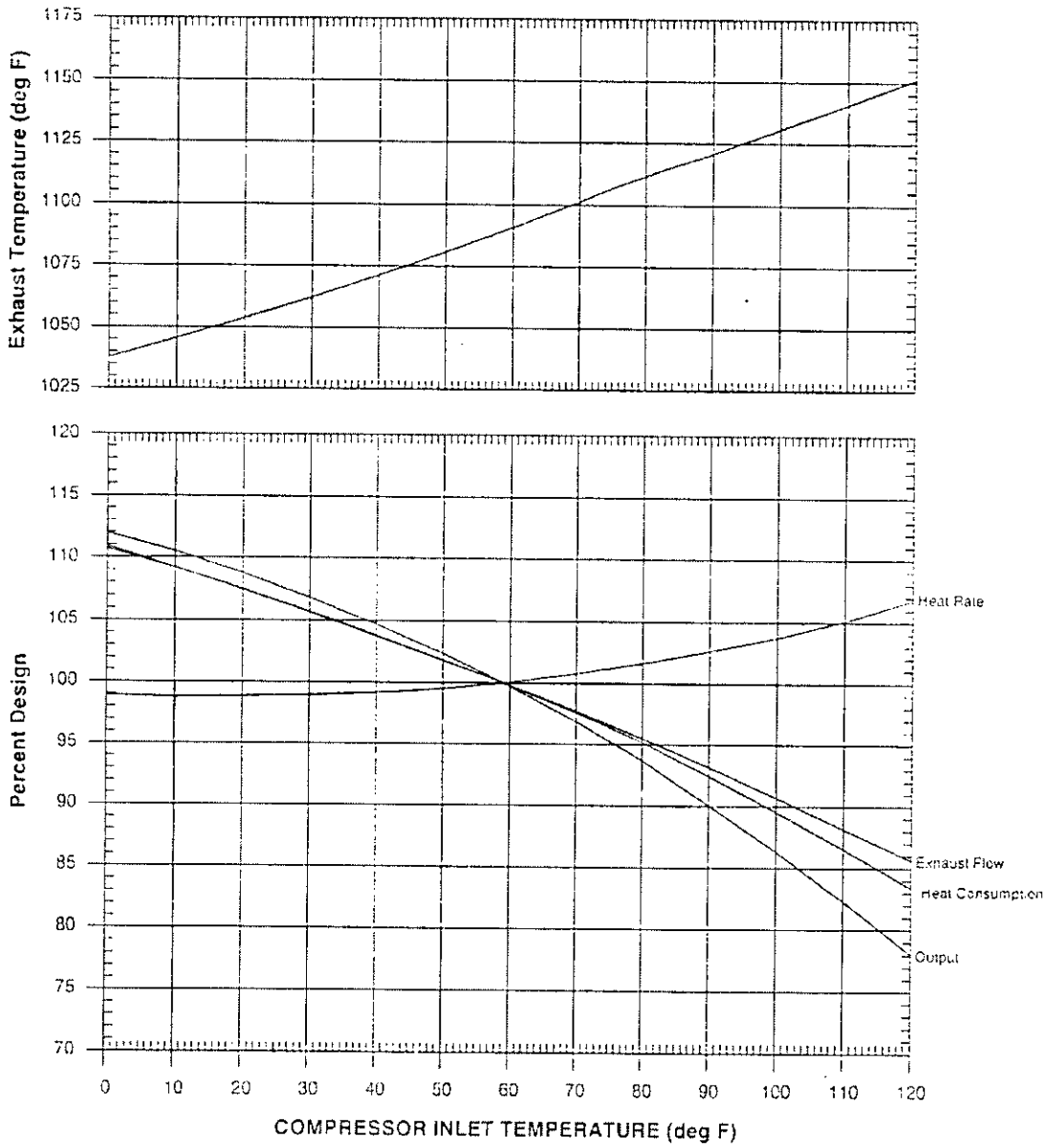
MW NOx = 46 lbs/lb-mole MW CO = 28 lbs/lb-mole

Heat Input HHV = (oil flow)(gross calorific value)/10E06

GENERAL ELECTRIC MODEL PG7241FA GAS TURBINE

Effect of Compressor Inlet Temperature on
Output, Heat Rate, Heat Consumption, Exhaust Flow
And Exhaust Temperature at Baseload

Fuel: Distillate
Combustor: DLN



ATTACHMENT C

Continuous Emissions Monitoring Data
Sam O. Purdom Generating Station
Unit 8

Year	Month	Day	Hour	NOx Reading (ppm)
0	10	2	12	26.7
0	10	2	13	47.9
0	10	2	14	35.7
0	10	2	15	37.3
0	10	2	17	15.6
0	10	2	19	37
0	10	2	20	44.8
0	10	2	21	25
0	10	2	22	31.9
0	10	2	23	51.5

Notes

Cold startup followed by two automated shutdowns for low IP steam drum level and turbine synchronization difficulty.

Year	Month	Day	Hour	NOx Reading (ppm)
0	10	3	0	51.6
0	10	3	1	64.8
0	10	3	4	38
0	10	3	5	44.7
0	10	3	6	54.4
0	10	3	7	17.4
0	10	3	8	10.5
0	10	3	9	10.1
0	10	3	10	9.5
0	10	3	11	9
0	10	3	12	8.8
0	10	3	13	8.9
0	10	3	14	9
0	10	3	15	9
0	10	3	16	10.9
0	10	3	17	11.9
0	10	3	18	9.1
0	10	3	19	9.2
0	10	3	20	9
0	10	3	21	9.3
0	10	3	22	9.4
0	10	3	23	9.4

Lost steam turbine due to high hotwell level. Restarted and achieved normal operation by 8:00AM

Year	Month	Day	Hour	NOx Reading (ppm)
0	11	1	20	39.8
0	11	1	21	39.5
0	11	1	22	39.6
0	11	1	23	36.6

Warm startup at 7:20PM. Shutdown at 10:30PM due to low IP drum level.
11/02/00 due to low IP drum level. Restarted unit again

Year	Month	Day	Hour	NOx Reading (ppm)
0	11	2	0	34.7
0	11	2	1	59.1
0	11	2	5	34.6
0	11	2	6	40.8
0	11	2	7	49.8
0	11	2	8	21.4
0	11	2	9	9
0	11	2	10	8.7
0	11	2	11	9.6
0	11	2	12	9.2
0	11	2	13	9.2
0	11	2	14	9.2
0	11	2	15	9.1
0	11	2	16	9.1
0	11	2	17	9.1
0	11	2	18	9.1
0	11	2	19	9.1
0	11	2	20	8
0	11	2	21	8
0	11	2	22	10.3
0	11	2	23	10.2

Shutdown again at 1:35AM due to low IP drum level.
Restarted unit at 4:48AM.

Year	Month	Day	Hour	NOx Reading (ppm)
0	11	20	0	32.5
0	11	20	5	48
0	11	20	6	52.3
0	11	20	7	21.7
0	11	20	8	62.6
0	11	20	9	21.5
0	11	20	10	10.4
0	11	20	11	10.3
0	11	20	12	9.9
0	11	20	13	9.5
0	11	20	14	9.5
0	11	20	15	10.7
0	11	20	16	11.1
0	11	20	17	10.7
0	11	20	18	10
0	11	20	19	10.1
0	11	20	20	11.6
0	11	20	21	28.2
0	11	20	22	39

Elected to shutdown unit at 12:07AM to test auxiliary equipment. Restarted unit at 4:30AM. Unit shutdown due to high vibration on steam turbine bearings
At 8:50PM, unit ramped down to 23MW due to low fuel gas temp.

Year	Month	Day	Hour	NOx Reading (ppm)
0	11	21	3	37.1
0	11	21	4	54.3
0	11	21	5	45.4
0	11	21	6	41.8
0	11	21	7	43.4
0	11	21	8	91.7
0	11	21	9	13.6
0	11	21	10	11.6
0	11	21	11	11.4
0	11	21	12	11.4
0	11	21	13	11.2
0	11	21	14	11.1
0	11	21	15	11.1
0	11	21	16	11.1
0	11	21	17	11.2
0	11	21	18	11
0	11	21	19	11.1
0	11	21	20	11.3
0	11	21	21	11.4
0	11	21	22	11.5
0	11	21	23	11.6

Hot startup at 3:25AM. Unit loading delayed due to high vibration on steam turbine bearing. Restarted unit. Normal operation achieved at 8:53AM

Year	Month	Day	Hour	NOx Reading (ppm)
0	12	13	7	25.9
0	12	13	10	42.3
0	12	13	11	46.8
0	12	13	12	48.1
0	12	13	13	50.8
0	12	13	14	57.6
0	12	13	15	37.2
0	12	13	16	41.1
0	12	13	17	56.5
0	12	13	18	69.8
0	12	13	19	74.6
0	12	13	20	75
0	12	13	21	74.5
0	12	13	22	51.7
0	12	13	23	44.6

Cold startup after two week outage. GE tuning DLN controls after combustor changeout. Tuning lasts until 1:30PM on 12/14/00

Year	Month	Day	Hour	NOx Reading (ppm)
0	12	14	0	55.4
0	12	14	1	75.8
0	12	14	2	77.1
0	12	14	3	76
0	12	14	4	76.2
0	12	14	5	75.4
0	12	14	6	75
0	12	14	7	83.1
0	12	14	8	95.2
0	12	14	9	61.2
0	12	14	10	26
0	12	14	11	22.7
0	12	14	12	9.4
0	12	14	13	9.1
0	12	14	14	9
0	12	14	15	10
0	12	14	16	10
0	12	14	17	9.5
0	12	14	18	9.1
0	12	14	19	9.1
0	12	14	20	9
0	12	14	21	10
0	12	14	22	11.6
0	12	14	23	10.3

GE DLN tuning ends at 1:30PM

Year	Month	Day	Hour	NOx Reading (ppm)
0	12	23	0	11.3
0	12	23	1	11.3
0	12	23	2	11.4
0	12	23	3	11.5
0	12	23	4	11.7
0	12	23	5	11.8
0	12	23	6	16.8
0	12	23	7	42.4
0	12	23	9	44.2
0	12	23	10	63.4
0	12	23	11	2.5
0	12	23	13	40.2
0	12	23	14	53.5
0	12	23	15	48.9
0	12	23	16	81
0	12	23	18	40
0	12	23	19	45.3
0	12	23	20	61
0	12	23	21	14.1

Shutdown at 6:40AM due to fuel gas heater temp controller freezing. Restarted at 9:49AM. Shutdown at 10:35AM due to high exhaust temp spread. Restarted at 10:50AM. Shutdown at 11:10AM due to lost aux. transformer. Restarted at 1:15PM. Shutdown at 2:35PM due to low IP drum level. Restart unit at 2:58PM. Shutdown at 4:20PM due to high exhaust temp spread. Restarted unit at 6:08PM. Shutdown at 8:55PM due to low level in IP drum. Left unit off until 12/24/00

Year	Month	Day	Hour	NOx Reading (ppm)
0	12	24	8	35.5
0	12	24	9	45.7
0	12	24	10	50.8
0	12	24	11	43.9
0	12	24	12	12.2
0	12	24	13	12.1
0	12	24	14	12.2
0	12	24	15	12.3
0	12	24	16	12.4
0	12	24	17	12.5
0	12	24	18	11.1
0	12	24	19	11.6
0	12	24	20	12.5
0	12	24	21	12.6
0	12	24	22	12.7
0	12	24	23	12.7

Hot startup. Shutdown due to high vibrations.
Restart at 9:55AM



ELECTRIC OPERATIONS
2602 JACKSON BLUFF RD.
TALLAHASSEE, FL 32304
850/891-5001 OFFICE
850/891-5162 FAX
talgov.com

SCOTT MADDOX
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Commissioner

ANITA R. FAVORS
City Manager
GARY HERNDON
Interim City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
SAM M. McCALL
City Auditor

February 28, 2002

HAND DELIVERY

Mr. Jeffrey Koerner, PE
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
Mail Station 5505

RECEIVED

FEB 27 2002

BUREAU OF AIR REGULATION

**Re: Permit Revision Request
Unit 8 Combined Cycle Combustion Turbine and Auxiliary Boiler
Permits PSD-FL-239, 1290001-002-AC, and 1290001-003-AV
Site Certification PA 97-35
Sam O. Purdom Generating Station**

Dear Mr. Koerner:

The City has received FDEP's request for additional information. At this time, the City is submitting responses to items 1, 4, 5 and 7 of the request, including a professional engineer's certification of the information contained herein (see Attachment A). In addition, the City is requesting an additional 30-day period to allow for response to the remaining three items.

In response to Item No. 1, the City understands the 30-day comment period that is required for the modification to the construction permit. However, the City would like to clarify that the 8.5 percent heat input increase, while firing natural gas, is the resultant increase at ISO conditions and is based on a 4 percent increase from the current permit limit (1467.7 mmBtu/hr LHV at 95°F, 60%RH, and 14.7 psi). This increase is related to the unit achieving a higher electrical output than originally guaranteed and variations in operational characteristics over time. The increase in maximum heat input rate for fuel oil combustion was less. But, similarly, 4 percent of the requested increase from the current permit limit (1659.5 mmBtu/hr at 95°F, 60%RH, and 14.7 psi) is related to the electric output and variations over time, and the balance of the increase is related to adjustments to ISO conditions.

In response to Item No. 4, initial performance testing, as required pursuant to 40 CFR 60, was conducted at base load on September 15, 2000, while firing natural gas, and on July 4, 2001, while firing No. 2 fuel oil. The heat input rate achieved during the three test runs conducted on September 15, 2000, averaged 1553.4 mmBtu/hr HHV at an inlet temperature of 86°F, which is approximately 12.5 percent less than the requested

An All-America City

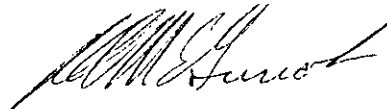
maximum heat input rate. Likewise, the heat input rate achieved during the three test runs conducted on July 4, 2001, averaged 1793.3 mmBtu/hr HHV at an inlet temperature of 78°F, which is approximately 6.9 percent less than the requested maximum heat input rate. Test data and related performance curve information is provided in Attachment B. The City recognizes that additional emission testing will be required to permit firing natural gas at the requested maximum heat input rate. However, as testing has already been completed for natural gas firing at 1553.4 mmBtu/hr HHV at 86°F, the City prefers to limit operation "by adjusting the entire heat input vs. combustor inlet temperature curve downward by an increment equal to the difference between the maximum permitted heat input (corrected for compressor inlet conditions) and 110 percent of the value reached during the test until a new test is conducted."

In response to Item No. 5, the City has compiled continuous emissions monitoring system data that represents the linked events that caused prolonged periods of high oxides of nitrogen readings. The compiled data is presented in Attachment B. A description of the linked events is provided to the right of each day's data. Please note, in order to reduce the length of Attachment C, only ten days of data are presented.

In response to Item No. 7, the City has rendered units 5 and 6 permanently inoperable. Removing reference to these units in the Title V permit would be appropriate.

If you have any questions regarding the additional information provided above, please feel free to contact either myself at (850) 891-5534 or Ms. Jennette Curtis at (850) 891-8850.

Yours truly,



R. E. McGarrah, Manager
Electric Production Division
Responsible Official

Attachments

cc: Hamilton Oven, DEP
Sandra Veazey, DEP
Al Linero, DEP
Scott Sheplak, DEP
Greg Worley, EPA
John Bunyak, NPS
G. King, COT
B. Cowart, COT
J. Curtis, COT
K. Bauer, COT

ATTACHMENT A

4. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

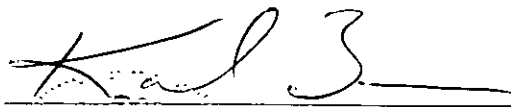
(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(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.

If the purpose of this application is to obtain a Title V source air operation permit (check here [X] 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 schedule is submitted with this application.

If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [X] 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.

If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here [] 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.



Signature

2/27/02
Date

(seal)

* Attach any exception to certification statement.

ATTACHMENT B

**INITIAL PERFORMANCE TEST DATA
NATURAL GAS**

Table 2. Emission Summary
Combustion Turbine Unit 8 - Gas Fired - Full Load
City of Tallahassee Sam O. Purdom Plant
Tallahassee, Florida
September 15, 2000

Run Number	Time	Oxygen %	NOx Emissions				CO Emissions			CT		SO2 lbs/hr	
			ppm	ppm 15% O2	ppm @ ISO	lbs/hr	lbs/MMBTU	ppm	lbs/hr	lbs/MMBTU	Gas Flow 100scf/hr		Heat Input MMBTU/HHV
Full Load													
1	1303-1403	13.61	10.84	8.77	10.55	50.70	0.032	0.88	2.52	0.002	15169	1568.9	0.900
2	1418-1518	13.70	10.83	8.87	11.15	50.71	0.033	0.86	2.45	0.002	15005	1552.0	0.890
3	1529-1629	13.63	10.58	8.59	10.92	48.71	0.032	0.80	2.24	0.001	14882	1539.3	0.880
Average	---	13.65	10.75	8.74	10.87	50.04	0.032	0.85	2.40	0.002	15019	1553.4	0.890

Natural Gas Fd-Factor = 8710 MMBTU/dscf

lbs/hr = ppm(2.595 x 10^{E-9})MW (20.9/20.9-%O2)(Fd)(Heat Input HHV)

MW NOx = 46 lbs/lb-mole

MW CO = 28 lbs/lb-mole

Allowable Emissions

NOx = 12 ppmvd @ 15%O2

CO = 25 ppmvd

Heat Input HHV = (gas flow)(gross calorific value)/10E06

September 15, 2000.
Purdom Unit 8 Combustion Turbine
compressor inlet temperature during
stack testing.

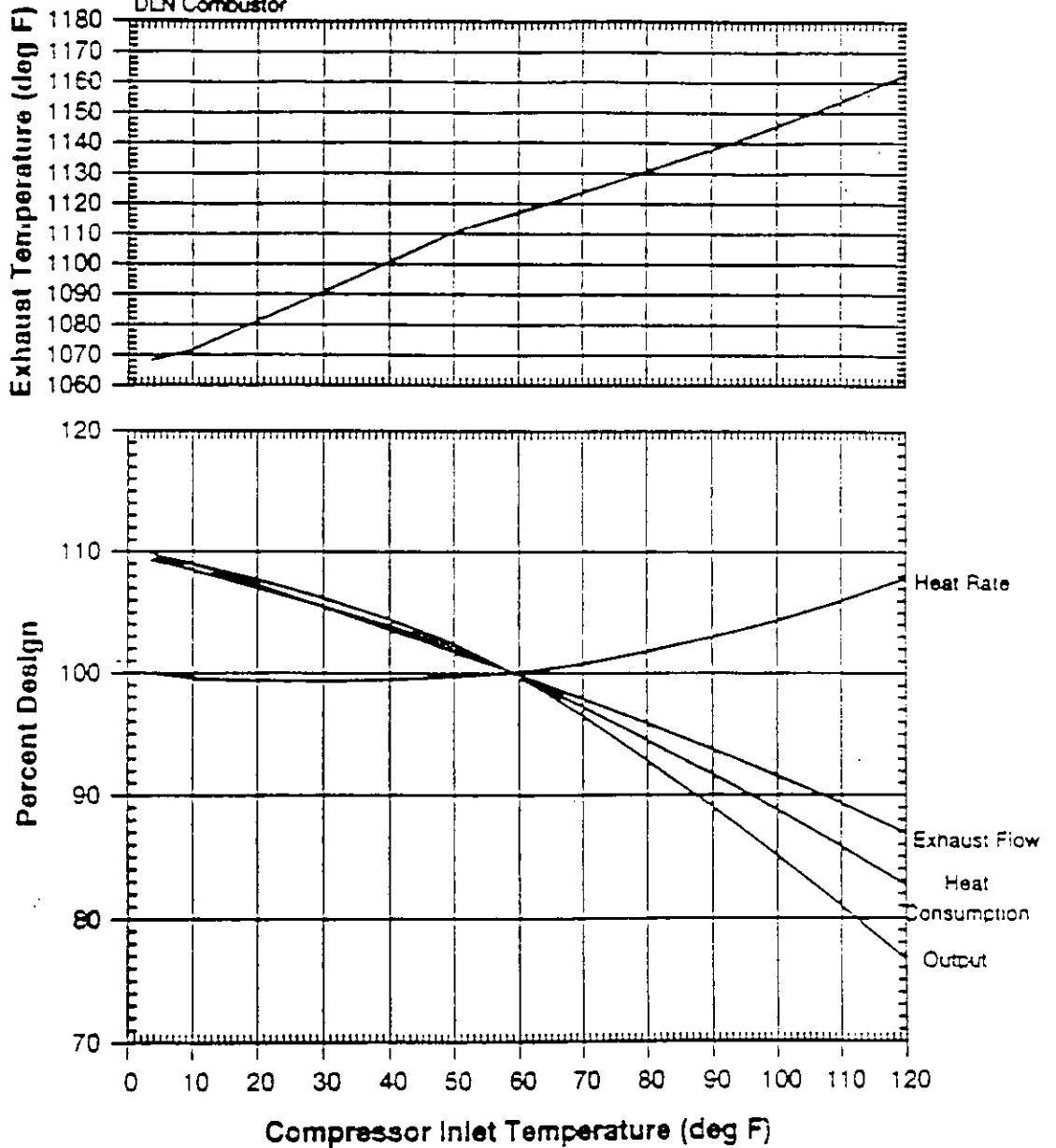
TIME	TEMP °F
13:00	86
13:05	86
13:10	86
13:15	86
13:20	87
13:25	87
13:30	87
13:35	87
13:40	87
13:45	87
13:50	87
13:55	86
14:00	87
14:05	87
14:10	86
14:15	86
14:20	85
14:25	85
14:30	85
14:35	85
14:40	85
14:45	85
14:50	86
14:55	85
15:00	85

TIME	TEMP °F
15:05	86
15:10	86
15:15	85
15:20	85
15:25	86
15:30	85
15:35	86
15:40	86
15:45	87
15:50	86
15:55	86
16:00	86
16:05	86
16:10	85
16:15	86
16:20	85
16:25	85
16:30	85
16:35	85
16:40	85
16:45	85
16:50	85
16:55	85
17:00	86

GENERAL ELECTRIC MODEL PG7241(FA) GAS TURBINE

Effect of Compressor Inlet Temperature on
Output, Heat Rate, Heat Consumption, Exhaust Flow
And Exhaust Temperature at Baseload

Fuel: Methane
Design Values on Curve 522HA851 Rev 0
DLN Combustor



F. Brooks
1/24/97

522HA852
Rev - 0

WEB

INITIAL PERFORMANCE TEST DATA
No. 2 FUEL OIL

**Table 1. Emission Summary
 Combustion Turbine Unit 8 - Oil Fired
 City of Tallahassee Sam O. Purdom Plant
 Tallahassee, Florida
 July 3 and 4, 2001**

Run Number	Time	Oxygen %	NOx Emissions				CO Emissions			CT	Heat Input MMBTU/HHV	SO2 lbs/hr	
			ppm	ppm 15% O2	ppm @ ISO	lbs/hr	lbs/MMBTU	ppm	lbs/hr	lbs/MMBTU			Oil Flow lbs/hr
Low Load - 60 MW Runs 1 & 2 (7/3/01), 65 MW Run 3 (7/4/01)													
1	0816-0851	13.67	46.88	38.26	48.67	136.45	0.149	1.26	2.23	0.0024	47261	917.8	37.81
2	0905-0948	13.69	48.48	39.67	46.88	141.24	0.154	1.07	1.90	0.0021	47176	916.2	37.74
3	0812-0848	13.42	43.30	34.15	40.35	128.75	0.133	1.22	2.21	0.0023	49953	970.1	39.96
Average	---	13.59	46.22	37.36	45.30	135.48	0.145	1.18	2.11	0.0023	48130	934.7	38.50
Base Load - 168 MW (7/4/01)													
1	0929-1029	12.42	50.60	35.21	44.16	245.79	0.137	1.44	4.26	0.0024	92514	1796.6	74.01
2	1054-1154	12.49	51.85	36.38	43.92	252.90	0.141	1.38	4.10	0.0023	92129	1789.2	73.70
3	1215-1315	12.44	52.02	36.28	43.81	252.94	0.141	1.04	3.08	0.0017	92386	1794.1	73.91
Average	---	12.45	51.49	35.95	43.96	250.54	0.140	1.29	3.81	0.0021	92343	1793.3	73.87

Fuel Oil F Factor = 9190 dsct/MMBTU

lbs/hr = ppm(2.595 x 10⁻⁹)MW (20.9/20.9-%O2)(Fd)(Heat Input HHV)

MW NOx = 46 lbs/lb-mole

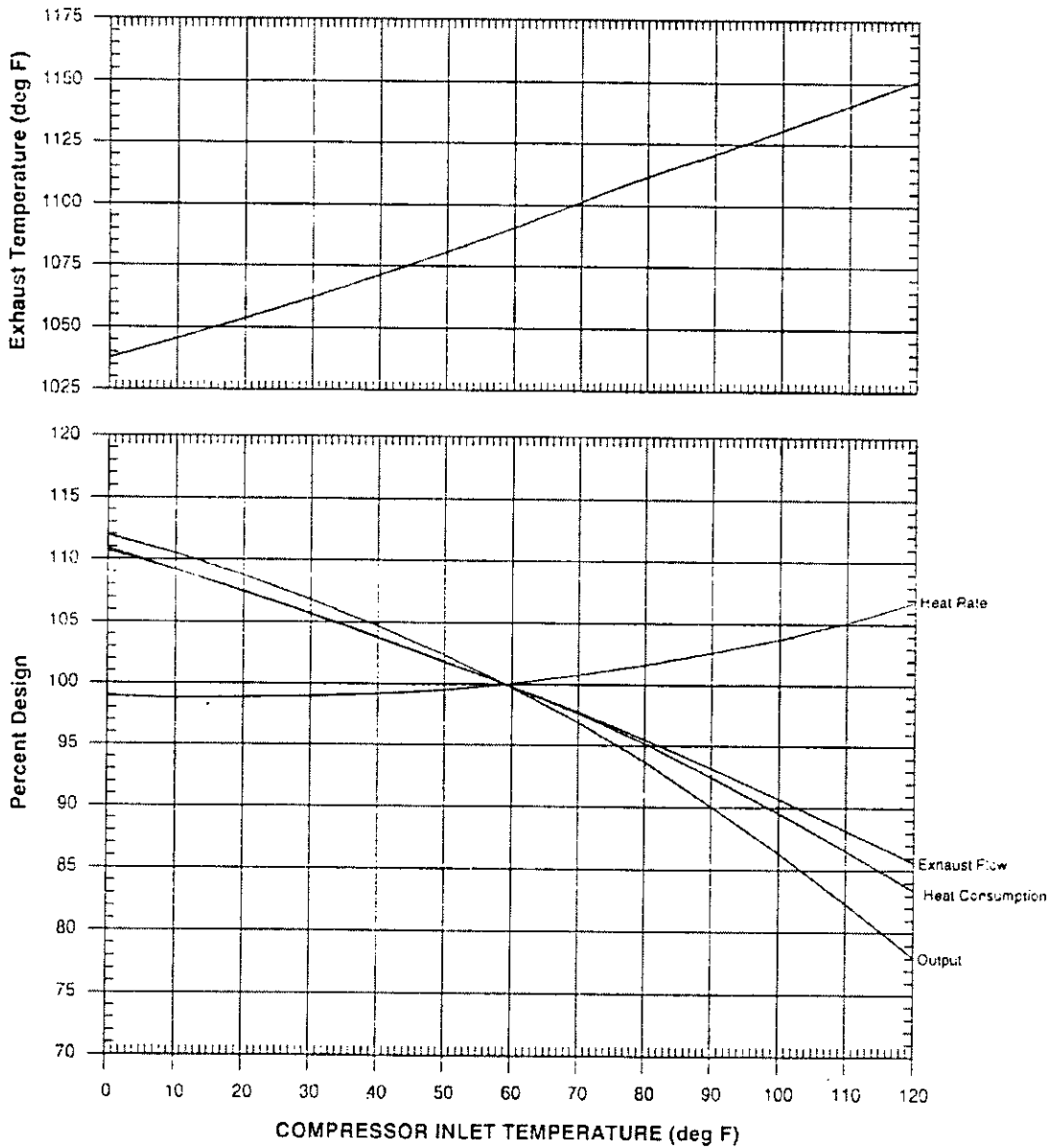
MW CO = 28 lbs/lb-mole

Heat Input HHV = (oil flow)(gross calorific value)/10E06

GENERAL ELECTRIC MODEL PG7241FA GAS TURBINE

Effect of Compressor Inlet Temperature on
Output, Heat Rate, Heat Consumption, Exhaust Flow
And Exhaust Temperature at Baseload

Fuel: Distillate
Combustor: DLN



ATTACHMENT C

Continuous Emissions Monitoring Data
 Sam O. Purdom Generating Station
 Unit 8

Year	Month	Day	Hour	NOx Reading (ppm)
0	10	2	12	26.7
0	10	2	13	47.9
0	10	2	14	35.7
0	10	2	15	37.3
0	10	2	17	15.6
0	10	2	19	37
0	10	2	20	44.8
0	10	2	21	25
0	10	2	22	31.9
0	10	2	23	51.5

Notes
 Cold startup followed by two automated shutdowns for low IP steam drum level and turbine synchronization difficulty.

Year	Month	Day	Hour	NOx Reading (ppm)
0	10	3	0	51.6
0	10	3	1	64.8
0	10	3	4	38
0	10	3	5	44.7
0	10	3	6	54.4
0	10	3	7	17.4
0	10	3	8	10.5
0	10	3	9	10.1
0	10	3	10	9.5
0	10	3	11	9
0	10	3	12	8.8
0	10	3	13	8.9
0	10	3	14	9
0	10	3	15	9
0	10	3	16	10.9
0	10	3	17	11.9
0	10	3	18	9.1
0	10	3	19	9.2
0	10	3	20	9
0	10	3	21	9.3
0	10	3	22	9.4
0	10	3	23	9.4

Lost steam turbine due to high hotwell level. Restarted and achieved normal operation by 8:00AM

Year	Month	Day	Hour	NOx Reading (ppm)
0	11	1	20	39.8
0	11	1	21	39.5
0	11	1	22	39.6
0	11	1	23	36.6

Warm startup at 7:20PM. Shutdown at 10:30PM due to low IP drum level.
 11/02/00 due to low IP drum level. Restarted unit again

Year	Month	Day	Hour	NOx Reading (ppm)
0	11	2	0	34.7
0	11	2	1	59.1
0	11	2	5	34.6
0	11	2	6	40.8
0	11	2	7	49.8
0	11	2	8	21.4
0	11	2	9	9
0	11	2	10	8.7
0	11	2	11	9.6
0	11	2	12	9.2
0	11	2	13	9.2
0	11	2	14	9.2
0	11	2	15	9.1
0	11	2	16	9.1
0	11	2	17	9.1
0	11	2	18	9.1
0	11	2	19	9.1
0	11	2	20	8
0	11	2	21	8
0	11	2	22	10.3
0	11	2	23	10.2

Shutdown again at 1:35AM due to low IP drum level.
Restarted unit at 4:48AM.

Year	Month	Day	Hour	NOx Reading (ppm)
0	11	20	0	32.5
0	11	20	5	48
0	11	20	6	52.3
0	11	20	7	21.7
0	11	20	8	62.6
0	11	20	9	21.5
0	11	20	10	10.4
0	11	20	11	10.3
0	11	20	12	9.9
0	11	20	13	9.5
0	11	20	14	9.5
0	11	20	15	10.7
0	11	20	16	11.1
0	11	20	17	10.7
0	11	20	18	10
0	11	20	19	10.1
0	11	20	20	11.6
0	11	20	21	28.2
0	11	20	22	39

Elected to shutdown unit at 12:07AM to test auxiliary equipment. Restarted unit at 4:30AM. Unit shutdown due to high vibration on steam turbine bearings
At 8:50PM, unit ramped down to 23MW due to low fuel gas temp.

Year	Month	Day	Hour	NOx Reading (ppm)
0	11	21	3	37.1
0	11	21	4	54.3
0	11	21	5	45.4
0	11	21	6	41.8
0	11	21	7	43.4
0	11	21	8	91.7
0	11	21	9	13.6
0	11	21	10	11.6
0	11	21	11	11.4
0	11	21	12	11.4
0	11	21	13	11.2
0	11	21	14	11.1
0	11	21	15	11.1
0	11	21	16	11.1
0	11	21	17	11.2
0	11	21	18	11
0	11	21	19	11.1
0	11	21	20	11.3
0	11	21	21	11.4
0	11	21	22	11.5
0	11	21	23	11.6

Hot startup at 3:25AM. Unit loading delayed due to high vibration on steam turbine bearing. Restarted unit. Normal operation achieved at 8:53AM

Year	Month	Day	Hour	NOx Reading (ppm)
0	12	13	7	25.9
0	12	13	10	42.3
0	12	13	11	46.8
0	12	13	12	48.1
0	12	13	13	50.8
0	12	13	14	57.6
0	12	13	15	37.2
0	12	13	16	41.1
0	12	13	17	56.5
0	12	13	18	69.8
0	12	13	19	74.6
0	12	13	20	75
0	12	13	21	74.5
0	12	13	22	51.7
0	12	13	23	44.6

Cold startup after two week outage. GE tuning DLN controls after combustor changeout. Tuning lasts until 1:30PM on 12/14/00

Year	Month	Day	Hour	NOx Reading (ppm)
0	12	14	0	55.4
0	12	14	1	75.8
0	12	14	2	77.1
0	12	14	3	76
0	12	14	4	76.2
0	12	14	5	75.4
0	12	14	6	75
0	12	14	7	83.1
0	12	14	8	95.2
0	12	14	9	61.2
0	12	14	10	26
0	12	14	11	22.7
0	12	14	12	9.4
0	12	14	13	9.1
0	12	14	14	9
0	12	14	15	10
0	12	14	16	10
0	12	14	17	9.5
0	12	14	18	9.1
0	12	14	19	9.1
0	12	14	20	9
0	12	14	21	10
0	12	14	22	11.6
0	12	14	23	10.3

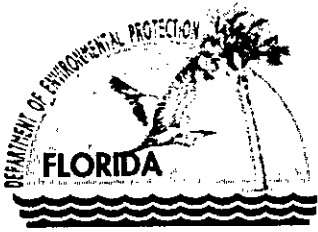
GE DLN tuning ends at 1:30PM

Year	Month	Day	Hour	NOx Reading (ppm)
0	12	23	0	11.3
0	12	23	1	11.3
0	12	23	2	11.4
0	12	23	3	11.5
0	12	23	4	11.7
0	12	23	5	11.8
0	12	23	6	16.8
0	12	23	7	42.4
0	12	23	9	44.2
0	12	23	10	63.4
0	12	23	11	2.5
0	12	23	13	40.2
0	12	23	14	53.5
0	12	23	15	48.9
0	12	23	16	81
0	12	23	18	40
0	12	23	19	45.3
0	12	23	20	61
0	12	23	21	14.1

Shutdown at 6:40AM due to fuel gas heater temp controller freezing. Restarted at 9:49AM. Shutdown at 10:35AM due to high exhaust temp spread. Restarted at 10:50AM. Shutdown at 11:10AM due to lost aux. transformer. Restarted at 1:15PM. Shutdown at 2:35PM due to low IP drum level. Restart unit at 2:58PM. Shutdown at 4:20PM due to high exhaust temp spread. Restarted unit at 6:08PM. Shutdown at 8:55PM due to low level in IP drum. Left unit off until 12/24/00

Year	Month	Day	Hour	NOx Reading (ppm)
0	12	24	8	35.5
0	12	24	9	45.7
0	12	24	10	50.8
0	12	24	11	43.9
0	12	24	12	12.2
0	12	24	13	12.1
0	12	24	14	12.2
0	12	24	15	12.3
0	12	24	16	12.4
0	12	24	17	12.5
0	12	24	18	11.1
0	12	24	19	11.6
0	12	24	20	12.5
0	12	24	21	12.6
0	12	24	22	12.7
0	12	24	23	12.7

Hot startup. Shutdown due to high vibrations.
Restart at 9:55AM



Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

February 4, 2002

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Robert McGarrah, Production Superintendent
City of Tallahassee – Electric Utilities
2602 Jackson Bluff Road
Tallahassee, FL 32304

Re: **Reminder of Request for Additional Information**
Project No. 1290001-005-AC (PSD-FL-239A)
Purdom Generating Station – Unit 8
Modification: Increase in Heat Input and Data Exclusion

Dear Mr. McGarrah:

On November 14, 2001, the Department received your application and sufficient fee for an air construction permit to modify the PSD permit for the Unit 8 gas turbine at the Purdom Generating Station. The application was incomplete. On December 5, 2001, the Department requested additional information that would allow continued processing of your application. To date, we have not received the requested additional information. Rule 62-4.055(1) of the Florida Administrative Code requires the following:

"The applicant shall have ninety days after the Department mails a timely request for additional information to submit that information to the Department. If an applicant requires more than ninety days in which to respond to a request for additional information, the applicant may notify the Department in writing of the circumstances, at which time the application shall be held in active status for one additional period of up to ninety days. Additional extensions shall be granted for good cause shown by the applicant. A showing that the applicant is making a diligent effort to obtain the requested additional information shall constitute good cause. Failure of an applicant to provide the timely requested information by the applicable deadline shall result in denial of the application."

It has been more than sixty (60) days since our request for additional information (copy attached). You are reminded that the permit processing time clock has stopped for this project and that we will not continue our review until we receive the additional information. If you require a period of time in addition to the 90 days allowed by rule, please submit a written request indicating the amount of time necessary. If you fail to provide the additional information or request additional time to submit the additional information, the Department will deny your application.

If you have any questions regarding this matter, please call me at 850/921-9536.

Sincerely,

Jeffery F. Koerner, P.E.
New Source Review Section

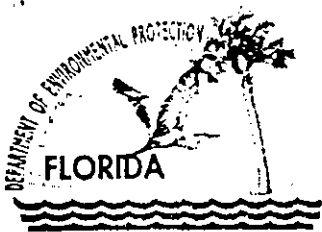
AAL/jfk

cc: Ms. Jennette Curtis, City of Tallahassee
Mr. Karl Bauer, City of Tallahassee
Ms. Sandra Veazey, NWD

Mr. Gregg Worley, EPA Region 4
Mr. John Bunyak, NPS

"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. Scruhs
Secretary

December 5, 2001

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Karl Bauer, P.E.
City of Tallahassee
300 South Adams Street, Mail Box A-36
Tallahassee, FL 32301

Re: **Request for Additional Information**
Project No. 1290001-005-AC (PSD-FL-239A)
Modification: Increase in Heat Input and Data Exclusion

Dear Mr. Bauer:

On November 14, 2001, the Department received your application and sufficient fee for an air construction and Title V permit modification for the Purdom Generating Station. As we discussed on the phone yesterday, the application is incomplete. In order to continue processing the application, the Department will need the additional information requested below. Should your response to any of the below items require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

1. Based on our pre-application meeting, you are requesting a simultaneous modification of the PSD and Title V permits. The process will involve a single public notice for the separate projects. Notwithstanding any petitions, the PSD permit could be issued shortly after the comment period. The revised Title V permit would become the proposed permit subject to EPA review and follow that process alone. Because the request is for an 8.5% increase in the permitted capacity of this unit, a 30-day comment period is required for the PSD permit (which is consistent with the comment period for the Title V revision). Please confirm and/or comment.
2. Please estimate the emissions increases expected from the increase in heat input alone. Would these increases exceed the PSD significant emissions rates?
3. Did the original project result in a significant net emissions increase, which was predicted to have an impact on the nearby Class I area of 1.0 ug/m^3 or greater? Based on your requested increase in heat input, will the project now result in an impact on the nearby Class I area of 1.0 ug/m^3 or greater?
4. Please provide emissions test data that demonstrates compliance at the higher heat input rates. Note: Testing performed within 10% of the requested maximum heat input rate could be used to demonstrate compliance. Otherwise, it will be necessary to require testing at the higher rate.
5. Please provide actual emissions and operational data that support your request for additional periods of data exclusion (i.e., during periods of extended startups, multiple startups/shutdowns, tuning, etc.). Discuss operation of Unit 8, related NOx emissions, and the problems encountered.
6. Please submit a copy of the air construction permit for the auxiliary boiler and provide a copy of the P.E. certification that the auxiliary boiler was constructed in accordance with the application and air construction permit. Once this requirement has been satisfied, the Title V permit will be revised to remove

"More Protection, Less Process"

Printed on recycled paper.

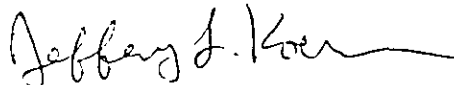
the provisions to submit this information. Please confirm that the request to allow operation of the auxiliary boiler when *either* Unit 7 or 8 is shutdown would not affect any previous modeling impact analyses.

7. Units 5 and 6 are permanently shutdown. These units will be removed from the Title V permit. Please comment.

The Department will resume processing your application after receipt of the requested information. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. For any material changes to the application, please include a new certification statement by the authorized representative or responsible official. You are reminded that Rule 62-4.055(1), F.A.C. now requires applicants to respond to requests for information within 90 days or provide a written request for an additional period of time to submit the information.

If you have any questions regarding this matter, please call me at 850/921-9536.

Sincerely,



Jeffery F. Koerner, P.E.
New Source Review Section

AAL/jfk

cc: Ms. Jennette Curtis, City of Tallahassee
Ms. Sandra Veazey, NWD
Mr. Gregg Worley, EPA Region 4
Mr. John Bunyak, NPS

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) B. Date of Delivery <i>Angelia Hubbard</i> 2/6/02</p> <p>C. Signature <i>Angelia Hubbard</i> <input checked="" type="checkbox"/> Agent <input type="checkbox"/> Addressee</p>
<p>1. Article Addressed to:</p> <p>Mr. Robert McGarrah Production Superintendent City of Tallahassee - Electric Utilities 2602 Jackson Bluff Road Tallahassee, FL 32304</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) 7000 2870 0000 7028 3215</p>	

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PS Form 3800, May 2000 See Reverse for Instructions



UBCS - Environmental Resources
(850) 891-8852 phone
(850) 891-8277 fax

City Hall
300 S. Adams Street
Tallahassee, Florida 32301

FAX

To: Jeff Koerner/Cleve From: Jennette Curtis
Fax: 922-6979 Pages:
Phone: Date: 1/8/02
Re: Purdum B - Permit Revision CC:

Here are some pages from PSD Application (also located in Volume 2 Section 10.1.5 of the Site Cert. Application) that may be of help to you relative to the questions you called about.

Purdom Unit 8

**TABLE 6-7
INVENTORY OF SOURCES PROVIDED BY FDEP**

Brooks Concrete Service	McNeill Company Inc.
*C.W. Roberts Contracting Inc.	National Linen Service
City of Quincy	Olin Corporation (now Primex Technologies)
Culley & Sons Funeral Home	*Pat Higdon Industries
Department of Management Services	*Sasser Crematory
DBA Rich Concrete	Sikea Industries, Inc.
Fairchild Cremation Service, Inc.	Sonos Systems of Florida Partnership, Ltd.
Florida A&M University	Southern Concrete and Construction
Florida M & M	St. Marks Refinery, Inc.
Florida Mining & Materials Concrete Corp.	Talla - Comm Industries Inc.
Florida Rock Industry	Tallahassee City Hopkins Generating Station
*Floridian Co.	Tallahassee City Purdom Generating Station
General Dynamics	Terminal Service Company
*Harborlite Corporation	U.S. Marine
*Higdon Furniture Industries	LFC No. 47 Corp.
*Mactavish Furniture Industries	White Construction Company
McKenzie Service Co.	
*Located greater than 50 km from the Purdom Station	
Source: FDEP, 1996a	

presented in Table 7-3. As indicated, the maximum predicted concentrations due to the Project are all below the monitoring de minimis levels and monitoring is not required.

7.2 PSD INCREMENT ANALYSIS

7.2.1 Class II Area

The receptor grid depicted in Figures 6-6 through 6-9 was used in the analysis together with all five years of meteorological data. In addition to the emissions from the proposed Project listed in Table 6-5, the emissions from the other PSD increment consuming and increment expanding sources identified in Table 6-10 were included in the modelling. The results are presented in Table 7-4. As indicated in the table, the maximum predicted Class II PSD increment consumption in the vicinity of the proposed Project is well within the allowable values for all averaging times.

7.2.2 Class I Area

As the proposed Project will be located close to both the St. Marks National Wilderness Area (NWA) and the Bradwell Bay National Wilderness Area (NWA), both designated as Class I PSD areas by Rule 62-204.360(4)(b), F.A.C., the impacts of the proposed Project were modeled for both areas. Evaluations of impacts on the next closest Class I areas, the Chassahowitzka National Wilderness Area and the Okefenokee National Wilderness Area, were not performed due to their distances from the proposed Project and the small emissions changes which will result. The PSD regulations and guidelines do not yet contain specific significance values for use in determining whether a detailed analysis of Class I PSD increment consumption is warranted. EPA has proposed such values in their New Source Review Reform package (61 FR 38,249 dated July 23, 1996). However, the USFWS has asked that the significance values suggested by the NPS/USFWS be used. Therefore project impacts in the Class I areas have been compared with both sets of significance values.

A summary of the Project's predicted impact on the Class I area receptors (see Tables 6-11 and 6-12 and Figures 6-18 through 6-25) is presented in Tables 7-5 and 7-6 for the St. Marks NWA and Bradwell Bay NWA, respectively. As indicated, the predicted maximum impacts are below the significance values for SO₂ and PM₁₀ at both Class I areas, and no further analysis is required for those pollutants. For NO₂ the predicted maximum impacts are above the significance levels, and additional modelling is required.

However, since the City has chosen to complete multi-source PSD modelling regardless of the significance of the Project impacts, the next step was undertaken for all three pollutants.

An analysis was conducted with the ISCST3 model of Class I area impacts using the other PSD increment consuming and expanding sources contained in Table 6-10 in addition to the proposed Project. The results of that analysis are presented in Tables 7-7 and 7-8 for the two Class I areas. As indicated, the PSD Class I impacts are within the allowable increments for all pollutants and averaging times.

Purdum Unit 8

**TABLE 1-5
SIGNIFICANCE OF PROJECT IMPACTS AT ST. MARKS NWA CLASS I AREA**

Pollutant	Ave Period	Max(1) Referred Conc. (ug/m ³)	RPA Significance Criteria(2) (ug/m ³)	PLM Significance Criteria(2) (ug/m ³)	Period (yr/month)	Receptor Location(4)		Preliminary Maximum(4) Concentration by Year				
						East (m)	North (m)	1985 (ug/m ³)	1986 (ug/m ³)	1991 (ug/m ³)	1994 (ug/m ³)	1997 (ug/m ³)
Sulfur Dioxide (SO ₂)	3-hr	0.0043	1.0	0.48	88071612	770257	3339226	0.00066	0.00068	0.00050	0.00431	0.00055
Sulfur Dioxide (SO ₂)	24-hr	<0.00001 ⁽³⁾	0.2	0.07	NA	NA	NA	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Sulfur Dioxide (SO ₂)	Annual	<0.00001 ⁽³⁾	0.1	0.03	NA	NA	NA	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Particulate Matter (PM ₁₀)	24-hr	0.14	0.3	0.27	89033124	769717	3339105	0.14	0.12	0.075	0.088	0.14
Particulate Matter (PM ₁₀)	Annual	<0.00001 ⁽³⁾	0.2	0.08	NA	NA	NA	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Nitrogen Dioxide (NO ₂)	Annual	0.86	0.1	0.03	87	769760	3339160	0.26	0.48	0.86	0.72	0.48

(1) Short-term values are highest second high values for this analysis.
 (2) Federal Register July 23, 1996 p. 38,249.
 (3) Maximum impact zero or negative due to increment expanding sources.
 (4) Unit 8 stack location 769,611 m East, 3,339,767 m North.
 Source: Foster Wheeler Environmental, 1997

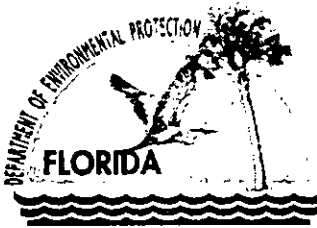
8-7

1/8/00

Cleve,

You should have the disc with the modeling output so you can check the highest high value for this analysis.

JC



Jeb Bush
Governor

Department of Environmental Protection

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

David B. Struhs
Secretary

December 5, 2001

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Karl Bauer, P.E.
City of Tallahassee
300 South Adams Street, Mail Box A-36
Tallahassee, FL 32301

Re: **Request for Additional Information**
Project No. 1290001-005-AC (PSD-FL-239A)
Modification: Increase in Heat Input and Data Exclusion

Dear Mr. Bauer:

On November 14, 2001, the Department received your application and sufficient fee for an air construction and Title V permit modification for the Purdom Generating Station. As we discussed on the phone yesterday, the application is incomplete. In order to continue processing the application, the Department will need the additional information requested below. Should your response to any of the below items require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

1. Based on our pre-application meeting, you are requesting a simultaneous modification of the PSD and Title V permits. The process will involve a single public notice for the separate projects. Notwithstanding any petitions, the PSD permit could be issued shortly after the comment period. The revised Title V permit would become the proposed permit subject to EPA review and follow that process alone. Because the request is for an 8.5% increase in the permitted capacity of this unit, a 30-day comment period is required for the PSD permit (which is consistent with the comment period for the Title V revision). Please confirm and/or comment.
2. Please estimate the emissions increases expected from the increase in heat input alone. Would these increases exceed the PSD significant emissions rates?
3. Did the original project result in a significant net emissions increase, which was predicted to have an impact on the nearby Class I area of 1.0 ug/m³ or greater? Based on your requested increase in heat input, will the project now result in an impact on the nearby Class I area of 1.0 ug/m³ or greater?
4. Please provide emissions test data that demonstrates compliance at the higher heat input rates. Note: Testing performed within 10% of the requested maximum heat input rate could be used to demonstrate compliance. Otherwise, it will be necessary to require testing at the higher rate.
5. Please provide actual emissions and operational data that support your request for additional periods of data exclusion (i.e., during periods of extended startups, multiple startups/shutdowns, tuning, etc.). Discuss operation of Unit 8, related NOx emissions, and the problems encountered.
6. Please submit a copy of the air construction permit for the auxiliary boiler and provide a copy of the P.E. certification that the auxiliary boiler was constructed in accordance with the application and air construction permit. Once this requirement has been satisfied, the Title V permit will be revised to remove

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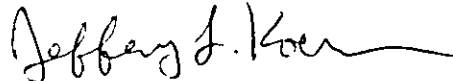
the provisions to submit this information. Please confirm that the request to allow operation of the auxiliary boiler when *either* Unit 7 or 8 is shutdown would not affect any previous modeling impact analyses.

7. Units 5 and 6 are permanently shutdown. These units will be removed from the Title V permit. Please comment.

The Department will resume processing your application after receipt of the requested information. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. For any material changes to the application, please include a new certification statement by the authorized representative or responsible official. You are reminded that Rule 62-4.055(1), F.A.C. now requires applicants to respond to requests for information within 90 days or provide a written request for an additional period of time to submit the information.

If you have any questions regarding this matter, please call me at 850/921-9536.

Sincerely,



Jeffery F. Koerner, P.E.
New Source Review Section

AAL/jfk

cc: Ms. Jennette Curtis, City of Tallahassee
Ms. Sandra Veazey, NWD
Mr. Gregg Worley, EPA Region 4
Mr. John Bunyak, NPS

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Mayor
STEVE MEISBURG
Mayor Pro Tem

JOHN PAUL BAILEY
Commissioner
CHARLES E. BILLINGS
Commissioner
DEBBIE LIGHTSEY
Commissioner

ANITA R. FAVORS
City Manager
GARY HERNDON
Interim City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
SAM M. McCALL
City Auditor

November 13, 2001

CERTIFIED MAIL

Mr. Clair H. Fancy, Chief
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
Mail Station 5505

RECEIVED

NOV 14 2001

BUREAU OF AIR REGULATION

**Re: Permit Revision Request
Unit 8 Combined Cycle Combustion Turbine and Auxiliary Boiler
Permits PSD-FL-239, 12900001-002-AC, and 1290001-003-AV
Site Certification PA 97-35
Sam O. Purdom Generating Station**

Dear Mr. Fancy:

On November 1, 2001, representatives of the City (including myself) met with Mssrs. Al Linero and Jeff Koerner of your staff to discuss the above-referenced PSD and Title V permits for the City of Tallahassee's (City) new Unit No. 8 at the Sam O. Purdom Generating Station in 1998. Both the construction on Unit No. 8 and the initial performance tests have been completed. As the shakedown period of the Unit 8 combined-cycle combustion turbine comes to completion, the City has noted some clarifications that would improve the air permits applicable to the Sam O. Purdom Generating Station. The following is a brief summary of the clarifications the City is seeking:

Heat Input And Temperature Reference Correction - Upon gathering data during the shakedown of the unit, the City has identified that the maximum heat input rate can potentially be greater than the design information originally supplied by General Electric Corporation (GE). This potential increase in maximum heat input rate is the result of the unit achieving a higher electrical output than originally guaranteed and to provide an adequate margin for compliance due to the variation in unit operational characteristics over time. Additionally, the GE design heat input is referenced to the compressor air inlet as opposed to the ambient air

An All-America City

temperature referenced in the permit. Lastly, in order to make it easier to utilize the GE correction curves, the City is requesting that the permit temperature condition be changed from 95°F to 59°F (ISO). Thus, the City is requesting that PSD Permit Specific Condition A.2 be revised as follows:

Specific Condition A.2 - The maximum heat input rates, based on the lower heating value (LHV) of each fuel to Purdom Unit 8 at ambient compressor inlet conditions of ~~95°F~~59°F temperature, 60% relative humidity, and 14.7 psi pressure shall not exceed ~~1,467.7~~1,696.0 mmBtu/hr when firing natural gas, or ~~1,659.5~~1,896.6 mmBtu/hr when firing No. 2 fuel oil. These maximum heat input rates will vary depending upon ambient compressor inlet conditions and the combustion turbine characteristics. Manufacturer's curves corrected for site conditions or equations for correction to other ambient compressor inlet conditions shall be provided to the Department of Environmental Protection (DEP) within 45 days of completing the initial compliance testing. These curves or equations shall be used to establish the maximum allowable heat inputs at other ambient compressor inlet conditions for compliance determination. (Title V Specific Conditions F.5 and F.34 would be corrected accordingly)

Authorization for Excess Emissions – Based on experience during the shakedown of Unit 8 as detailed in the February 3, 2001, letter submitted to your Department, the City requests authorization of the following causes of excess emissions.

Excess emissions will also occur during dry low-NO_x combustor (DLN) tuning that is required to take place following each and every combustor inspection (currently scheduled to occur on an annual basis). This tuning is required any time combustor parts are replaced in order to allow GE to modify the combustion process to minimize burner dynamics and minimize the NO_x emissions. Also, during combustor tuning, the unit is required to operate at load ranges below Mode 6 operation (Dry Low NO_x configuration). Based on the City's experience with the first combustor inspection, this required tuning is not something that can be completed within a two-hour period. However, it is also worth noting that there is no incentive to operate this unit longer than necessary at these load ranges. The excess emissions will continue to count toward the annual facility-wide NO_x emissions cap at the plant. The City therefore, requests that excess emissions be authorized for up to 72 hours annually for DLN tuning.

Lastly, when the unit has tripped off-line, the City has witnessed excess emissions in linked events (e.g., a malfunction immediately followed by an

automated shutdown of the unit). In those circumstances, the period of excess emissions was extended as the City attempted to correct the unit's operation to minimize such emissions. Thus, the City requests that excess emissions resulting during warm and cold startups be authorized up to 6 hours during any 24-hour period and excess emissions resulting from hot startups be allowed up to 4 hours during any 24-hour period. This would be inclusive of any linked event (e.g., malfunction, load changes or fuel switching).

Below are revised PSD permit specific conditions that the City is requesting (requested changes are highlighted with strike through and underlining).

Specific Condition B.1, Footnote (a) - 30-day rolling average excluding startup, shutdown, malfunction, DLN tuning, and fuel switching (see Permitting Note under Emission Unit -012 Emission Limitations and Standards Section in the Title V Permit)

Specific Condition B.3 - Oxides of nitrogen emissions when firing natural gas shall not exceed 12 ppmvd at 15% O₂ on a 30-day rolling average basis (except during periods of startup, shutdown, malfunction, DLN tuning, or fuel switching), as measured by CEMS. When monitoring data is not available, substitution for missing data shall be handled as required by Title IV (40 CFR 75) to calculate of the 30 day rolling average. (see Title V Specific Condition F.11)

Specific Condition B.4 - Oxides of nitrogen emissions when firing No. 2 fuel oil shall not exceed 42 ppmvd at 15% O₂ on a 30-day rolling average basis (except during periods of startup, shutdown, malfunction, DLN tuning, or fuel switching), as measured by CEMS, when fuel bound nitrogen values are less than or equal to 0.015 percent. (see Title V Specific Condition F.12)

Specific Condition C.1 - Excess emissions resulting from startup, shutdown, malfunction, DLN tuning, or fuel switching shall be permitted provided that best operational practices are adhered to and the duration of excess emissions shall be minimized but in no case exceed ~~four~~ 72 hours annually for DLN tuning and six hours in any 24-hour period for cold/warm startup, four hours in any 24-hour period for hot startup, or two hours in any 24-hour period for other reasons unless specifically authorized by DEP for longer duration.

Specific Condition F.1 - The permittee shall install, calibrate, maintain, and operate a continuous emission monitor in the stack to measure and record the nitrogen oxides emissions from Unit 8. Thirty day rolling average periods when NO_x emissions (ppmvd @ 15% oxygen) are above the BACT standards (12/42 ppmvd for gas/oil) shall be reported to the DEP Northwest District Office pursuant to Rule 62-4.160(8), F.A.C. The continuous emission monitoring systems must comply with the certification and quality assurance, and other applicable requirements from 40 CFR 75. Periods of startup, shutdown, malfunction, DLN tuning, and fuel switching shall be monitored, recorded, and reported as excess emissions when emission levels exceed the standards in Table 1 following the format of 40 CFR 60.7 (1997 version). The NO_x CEMS shall be used in lieu of the water/fuel monitoring system and fuel bound nitrogen (FBN) monitoring required for reporting excess emissions in accordance with 40 CFR 60.334(c)(1), Subpart GG (1997 version). The calibration of the water/fuel monitoring device required in 40 CFR 60.335 (c)(2) (1997 version) will be replaced by the 40 CFR 75 certification tests of the NO_x CEMS. Upon request from DEP, the CEMS emission rates for NO_x on Unit 8 shall be corrected to ISO conditions to demonstrate compliance with the NO_x standard established in 40 CFR 60.332. (see Title V Specific Condition F.18)

Although the correction in heat input will correlate to a correction in emission rates (g/sec, lb/hr and tons/yr) of pollutants, modeling results presented in the original permit application indicate enough tolerance to allow for the incremental corrections presented in this submittal. Tables 1 and 2 (Attachment A) summarize the modeling results presented in the Site Certification Application submitted in March 1997. As presented in Tables 1 and 2, only the 24-hour PSD analysis for sulfur dioxide concentrations in the Bradwell Bay National Wilderness Area (NWA) approaches the respective regulatory limit (in this case, the Class I PSD increment). However, the primary, if not entire source of the 24-hour sulfur dioxide concentration identified in the Bradwell Bay NWA originates from facilities other than the Sam O. Purdom Generating Station. It should also be noted that the modeling of the annual NO_x and SO₂ emissions is not affected because of the facility-wide caps maintained at the facility.

The City is also seeking a revision to Permit No. 1290001-002-AC for the auxiliary boiler that operates at the Sam O. Purdom Generating Station. To allow for steam to be available at all times (including the period when either Unit 7 or Unit 8 are initially starting up) the City is requesting the permit language to be revised to allow auxiliary boiler operation when either Unit 7

or Unit 8 are not operating. Below is revised permit specific conditions that the City is requesting (requested changes are highlighted with strike through and underlining).

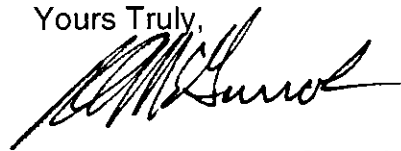
Specific Condition 6 – This emission unit shall only be operated as an auxiliary source of steam when either Unit 7 or Unit 8~~the existing generating units (boilers 5, 6, & 7)~~ are not operating. (see Title V Permitting Note in Subsection E. and Specific Condition E.5)

As part of this submittal, the City is providing amended permit application pages (Attachment B) that reflect the changes described above and additional changes to the actual date of construction, additional exempt emissions units that have been employed at the site since the most recent revision to the Title V permit, and changes to the construction permit for the auxiliary boiler.

Upon issuance of a revised permit, the City requests that the Department provide a copy of the final permit to Mr. Hamilton (Buck) Oven of the Siting Office, for conformance in the Site Certification.

We understand that no fee is required because we have an existing Title V permit and the requested changes do not trigger New Source Review. If you have any questions regarding this permit revision request, please feel free to contact either myself at (850) 891-5534 or Ms. Jennette Curtis at (850) 891-8850.

Yours Truly,



Robert McGarrah, Superintendent
Electric Production Division

Attachments

cc: Hamilton (Buck) Oven, DEP
Al Linero, DEP
Jeff Koerner, DEP
Scott Sheplak, DEP
G. King, COT
B. Cowart, COT
J. Curtis, COT
C. Holladay
B. Heaney, NWD
G. Warden, EPA
G. Bennett, NPS