



RECEIVED

October 27, 1998

OCT 30 1998

**BUREAU OF
AIR REGULATION**

Mr. Scott Sheplak, P.E.
Division of Air Resource Management
Florida Department of Environmental Protection
2600 Blair Stone Rd.
Tallahassee, Florida 32399-2400

Dear Mr. Sheplak:

Re: FPC Crystal River Facility, Notice of Intent to Issue Title V Air Operation Permit
Revised Draft Title V Permit No. 0170004-004-AV

Enclosed please find the notarized proof of publication received from the Citrus County Chronicle for the Florida Department of Environmental Protection *Notice of Intent to Issue Title V Air Operation Permit* referenced to the above request. The notice was published on October 12, 1998.

If you should have any questions concerning this correspondence, please do not hesitate to contact me at (727) 826-4258.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Osbourn", written over a horizontal line.

Scott H. Osbourn
Senior Environmental Engineer

cc: Bill Thomas, DEP SW District (w/attach)

Attachment

11/4/98 cc: Ed Ivec

Proof Of Publication

from the
CITRUS COUNTY CHRONICLE
Crystal River, Citrus County, Florida
PUBLISHED DAILY

STATE OF FLORIDA
COUNTY OF CITRUS

Before the undersigned authority personally
appeared FELICIA H. SATCHELL

of the Citrus County Chronicle, a newspaper
published daily at Crystal River, in Citrus County,
Florida, that the attached copy of advertisement
being a public notice in the matter of the

PERMIT NO. 0170004-004-AV/CITRUS COUNTY

Court, was published in said newspaper in the issues
of

OCTOBER 12, 1998

Affiant further says that the Citrus County Chronicle
is a newspaper published at Crystal River in said
Citrus County, Florida, and that the said newspaper
has heretofore been continuously published in Citrus
County, Florida, each week and has been entered
as second class mail matter at the post office in
Inverness in said Citrus County, Florida, for a period
of one year next preceding the first publication of
the attached copy of advertisement; and affiant
further says that he/she has neither paid nor
promised any person, firm or corporation any
discount, rebate, commission or refund for the
purpose of securing this advertisement for
publication in the said newspaper.

Felicia H. Satchell
The forgoing instrument was acknowledged before
me this 12th day of OCT 19 98
by FELICIA H. SATCHELL

who is personally known to me and who did take
an oath.

Jeanette A. Schmidt
Notary Public
Notary Public, State of Florida
Commission No. CC 669909
My Commission Exp. 08/16/2001
1-800-1-NOTARY - Fla. Notary Service & Bonding Co.

4401012 MCRB
PUBLIC NOTICE
OF INTENT TO ISSUE TITLE V AIR OPERATION PERMIT
STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Title V Revised DRAFT Permit No. 0170004-004-AV

Crystal River Plant
Citrus County

The Department of Environmental Protection (permitting authority) gives notice of its intent to issue a Title V of operation permit to Seminole Electric Cooperative, Inc. for the Crystal River Plant located west of U.S. Highway 19, north of Crystal River, south of the Cross State Barge Canal, Citrus County. This permit incorporates the Phase I/II NOx standards into Title V Acid Rain Part pursuant to Rule 62-214.360 (6), Florida Administrative Code (F.A.C.). The applicant's name and address are: Florida Power Corporation, 3201 34th Street South, St. Petersburg, Florida 33711.

The permitting authority will issue Title V PROPOSED Permit, and subsequent Title V FINAL Permit, in accordance with the conditions of the Title V Revised DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The permitting authority will accept written comments concerning the proposed Title V Revised DRAFT Permit issuance action for a period of 30 (thirty) days from the publication of this Notice. Written comments should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station # 5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in significant change in this Revised DRAFT Permit, the permitting authority shall issue another Revised DRAFT Permit and require, if applicable, another Public Notice.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Section 120.569 and 120.57 of the Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station # 35, Tallahassee, Florida 32399-3000 (Telephone: 904/487-9730; Fax: 850/487-4936). Petitions filed by any persons other than those entitled to written notice under Section 120.60 (3), F.S., must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of the notice of intent, whichever occurs first. Under Section 120.60 (3), F.S., however, any person who asked the permitting authority for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the applicable time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code (F.A.C.).

A petition that disputes the material facts on which the permitting authority's action is based must contain the following information:

- (a) The name and address of each agency affected and each agency's file or identification number, if known;
- (b) The name, address and telephone number of the petitioner; name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how petitioner's substantial rights will be affected by the agency determination;
- (c) A statement of how and when the petitioner received notice of the agency action or proposed action;
- (d) A statement of all disputed issues of material fact. If there are none, the petition must so state;
- (e) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle petitioner to relief; and
- (f) A demand for relief.

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

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

Mediation is not available for this proceeding.

In addition to the above, pursuant to 42 United States Code (U.S.C.) Section 7661 d (b) (2), any person may petition the Administrator of the EPA within 60 (thirty) days of the expiration of the Administrator's 45 (forty-five) day review period as established at 42 U.S.C. Section 7661 d (b) (1), to object to issuance of any permit. Any petition shall be based only on objections to the permit that were raised with reasonable specificity during the 30 (thirty) day public comment period provided in this notice, unless the petitioner demonstrates the Administrator of the EPA that it was impracticable to raise such objections within the comment period or unless the grounds for such objection arise after the comment period. Filing of a petition with the Administrator of the EPA does not stay the effective date of any permit properly issued pursuant to the provisions of Chapter 62-21, F.A.C. Petitions filed with the Administrator of EPA must meet the requirements of 42 U.S.C. Section 7661 d (b) (2) and must be filed with the Administrator of the EPA at: U.S. EPA, 401 M Street S.W., Washington, D.C. 20460.

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

Permitting Authority: Affected District/Local Program
Department of Environmental Protection

Southwest District Office
Department of Environmental Protection
1111 South Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Telephone: 904/487-1344
Fax: 850/922-9779

The complete project file includes the Revised DRAFT Permit application, and the information submitted by the respondent, the official, exclusive, or confidential records under Section 433.111, F.S. Interested persons may contact Scott M. Sheppard, P.E., at the above address, or call 850/921-9332 for additional information.

Published one (1) time in the Citrus County Chronicle: Monday, October 12, 1998.

Crystal River



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OCT 15 1998

BUREAU OF
AIR REGULATION

October 12, 1998

Mr. Scott Sheplak, P.E.
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Rd.
Tallahassee, Florida 32399-2400

Dear Mr. Sheplak:

Re: Status of Title V Permits

As you know, a meeting was held on August 28, 1998 between the Department and Mr. Scott Osbourn of my staff. The purpose of the meeting was to resolve several pending Title V issues in order to advance these permits to the "proposed" stage as expeditiously as possible. Based upon the meeting, the following is a brief summary of FPC's understanding and position regarding the status of several of FPC's Title V permits.

1. **Bartow facility** (DRAFT Title V Permit No. 1030011-002-AV)

FPC received the Intent to Issue Title V Air Operation Permit and draft Title V permit for the Bartow facility on October 6, 1997. Following several extensions of time and discussions with the Department, FPC filed a Petition for Administrative Hearing on April 30, 1998 (Petition). The primary issue involved in this Petition is whether FPC is required to retain an electrostatic precipitator (ESP) associated with Unit 1, although there are numerous other less contentious permit issues that also require resolution.

As detailed in FPC's November 11, 1997 comment letter and FPC's Petition filed April 30, 1998, FPC maintains that there is no factual or legal basis to require FPC to retain and operate the electrostatic precipitator (ESP) associated with Bartow Unit 1. However, in an effort to move the Title V permitting process forward, FPC is willing to accept a permit that requires that the ESP be retained and used. In exchange for accepting such a requirement, FPC requests the inclusion of additional permit language to clarify this unique situation. Specifically, the ESP utilized at the Bartow facility was not designed to be operated during fuel oil firing (i.e., the ESP was designed based on the use of a coal/oil mixture (COM) fuel). The ESP is also reaching the end of its anticipated design life. Therefore, significant capital investment will be required to continue its operation. Also, because this unit is oil-fired, the ESP is not needed to assure compliance with the applicable particulate matter limits. FPC requests that the statement of basis for the Bartow Title V

permit recognize these facts, in order to ensure that the Credible Evidence rule and the Compliance Assurance Monitoring (CAM) rule, to the extent they may be triggered for Unit 1, are appropriately implemented. Specifically, the final CAM rule (40 CFR Part 64.2(b)(ii), Control Devices Criterion) applies only to pollutant-specific emissions units that rely on a control device to achieve compliance. In this regard, FPC requests that the description/statement of basis for Unit 1 be revised as follows:

Unit 1 is a Particulate matter emissions are controlled by a General Electric Services, Inc. Model 1-BAB1.2X37(9)36.0-434-4.3P electrostatic precipitator (ESP) consisting of five fields in depth. This ESP was designed to operate when utilizing a coal/oil mixture, which is no longer burned by FPC. Moreover, because Unit 1 is oil-fired, this unit is capable of meeting the applicable particulate matter and opacity limits in Conditions A.7 and A.8 without the use of the ESP and, therefore, the provisions of 40 CFR Part 64 do not apply..

In addition, FPC submitted an application to the Department requesting a permit amendment for modification of the fly ash collection system associated with the ESP. The Department has responded that this request is acceptable and that operating permits AO52-233149 and -232464 (for Unit 1 and the fly ash system, respectively) will be amended. Therefore, several Title V conditions relating to operation of the fly ash system will need to be revised. The current request for an extension of time in which to file a petition for an administrative hearing expires on October 15, 1998. In order to properly address the above issues, FPC has requested a further extension until November 15, 1998.

2. **Anclote facility** (Draft Title V Permit No. 1010017-003-AV)

Although there are several issues involved with this permit, the provision regarding used oil appears to be the primary issue. This permit is under Petition for Administrative Hearing with DOAH, to which we currently have an extension of time until December 1, 1998. In order to withdraw its Petition for Administrative Hearing, FPC needs to receive a document from DEP reflecting revised language to which both parties agree.

In this regard, FPC has provided DEP with additional data regarding how other states have authorized facilities to utilize on-specification used oil. None of the examples found thus far have expressed any concern regarding lead emissions; in fact, the lead criteria for "on-specification" used oil was established at a level expressly designed to protect the National Ambient Air Quality Standard for lead.

3. **DeBary facility** (Draft Title V permit No. 1270028-001-AV)

FPC understands that the issues involved with this permit were resolved at our August 28, 1998 meeting. As requested by the Department during our meeting, attached is a summary of combustion turbine operating hours for 1997 and 1998. We appreciate the Department's efforts to reach this agreement and look forward to withdrawing our Petition for Administrative Hearing after receiving a document from the Department reflecting the revised conditions.

4. **Crystal River facility** (Draft Title V Permit No. 1270020-001-AV)

FPC received a revised draft permit from the Department on October 5, 1998, and the issues involved with this permit have largely been resolved. The *Notice of Intent to Issue Title V Permit* was published on October 12, 1998. In order to properly review the revised draft permit, FPC has requested an extension of time in which to file a petition for an administrative hearing until November 12, 1998.

5. **Periodic Monitoring**

By letter dated August 27, 1998 (attached), FPC requested specific language to be added to FPC's permits regarding heat input. FPC specifically reiterates this request for the four permits discussed above. FPC has still not finalized its position on other periodic monitoring issues.

Thank you for your attention and cooperation in issuing Title V permits to FPC's facilities. If the above information is not consistent with your understanding, or we need to discuss any of these issues or deadlines further, please contact either Mr. Scott Osbourn at (727) 826-4258 or me at (727) 826-4301 at your earliest convenience. Again, it is FPC's desire to advance these Title V permits to the "final" stage as expeditiously as possible.

Sincerely,



W. Jeffrey Pardue, C.E.P.
Director, Environmental Services
FPC Responsible Official

Attachments

cc: Clair Fancy, DEP BAR
Robert Manning, Esq., HGS&S
Ken Kosky, P.E., Golder Associates

DeBary Operating Hours

Author: Wilson B. Hicks Jr. at east/o=FLORIDA POWER/c=US/a=MCI/p=FLPROG
Date: 8/31/98 12:08 PM
Priority: Normal
Receipt Requested
TO: Scott H. Osbourn at goc,openmail
Subject: DEBARY P7-P10 1997 AND 1998 OPERATING HOURS

----- Message Contents -----

SCOTT:

PER YOUR REQUEST, HERE ARE THE HOURS:

YEAR	1997	1998
P-7	1817	1453
P-8	870	673
P-9	1722	1393
P-10	822	676

IF YOU NEED ANY ADDITIONAL INFORMATION, PLEASE, LET ME KNOW.

WILSON

Heat Input Correspondence



bcc: J. M. Kennedy
J. L. Tillman

File: Title V Periodic Monitorin
k:\user\sosbourn\1998\heatinpu.doc
927-616000-AIR

August 27, 1998

Mr. Clair Fancy, P.E.
Chief, Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Rd.
Tallahassee, Florida 32399-2400

Dear Mr. Fancy:

Re: Periodic Monitoring in Title V Permits: Heat Input Limits

As you know, a meeting was held between the EPA, the Department and utility representatives at the Florida Electric Power Coordinating Group (FCG) offices on July 14, 1998. The purpose of the meeting was to discuss the periodic monitoring requirements of 40 CFR 70.6(a)(3)(i) as applied to Title V permits. The meeting presented an opportunity for all parties to represent their views, and it was clear that there remains considerable disagreement as to the proper application of the periodic monitoring guidance.

In addition to the July 14, 1998 meeting, FPC has also reviewed DEP's March 10, 1998 letter to EPA (Re: Proposed Changes to FPL Proposed Title V Permits to Satisfy EPA Objections). FPC has still not formalized its position on periodic monitoring, including all of the issues raised in the March 10, 1998 letter. However, the resolution outlined in the March 10th letter regarding heat input limitations appears to be reasonable and one that FPC is willing to accept. This resolution required adding a note to the "permitted capacity" condition for each Title V permit, and an explanation that regular record keeping is not required for heat input. Specifically, the Department stated that they would add the following language to the statement of basis:

The heat input limitations have been placed in each permit to identify the capacity of each unit for the purposes of confirming that emissions testing is conducted within 90 to 100 percent of the unit's rated capacity (or to limit future operation to 110 percent of the test load), to establish appropriate emissions limits and to aid in determining future rule applicability. A note below the permitted capacity condition clarifies this. Regular record keeping is not required for heat input. Instead, the owner or operator is expected to determine heat input whenever emission testing is required, to demonstrate at what percentage of the rated capacity that the unit was tested. Rule 62-297.310(5), F.A.C., included in the permit, requires measurement of process variables for emissions tests. Such heat input determination may be based on measurements of fuel consumption by various methods including but not limited to fuel flow metering or tank drop

measurements, using the heat value of the fuel determined by the fuel vendor or the owner or operator, to calculate average hourly heat input during the test.

Also, the Department added the following language to each permit condition titled Permitted Capacity:

{Permitting note: The heat input limitations have been placed in each permit to identify the capacity of each unit for the purposes of confirming that emissions testing is conducted within 90 to 100 percent of the unit's rated capacity (or to limit future operation to 110 percent of the test load), to establish appropriate emission limits and to aid in determining future rule applicability.}

Accordingly, FPC requests that this language regarding heat input be added to all of FPC's Title V permits currently being processed by the Department. FPC intends to notify the Department as soon as possible after formalizing its position on the remainder of periodic monitoring issues. If you should have any questions concerning the above, please do not hesitate to contact me at (727) 826-4258.

Sincerely,



Scott H. Osbourn
Senior Environmental Engineer

cc: Robert Manning, HGS&S

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September 30, 1998

OCT 02 1998

BUREAU OF
AIR REGULATION

Ms. Kathy Carter, Clerk
Office of General Counsel
Florida Department of Environmental Protection
Room 638
3900 Commonwealth Blvd.
Tallahassee, FL 32399-3000

Dear Ms. Carter:

RE: Florida Power Corporation, Crystal River Plant
REQUEST FOR EXTENSION OF TIME on the *Intent to Issue Title V Air Operation Permit*,
Draft Permit No. 0170004-004-AV

On October 9, 1997, Florida Power Corporation (FPC) received the above-referenced Intent to Issue Title V Air Operation Permit. A review of the permit conditions has revealed that several issues remain to be resolved. Accordingly, FPC requests an extension of time, pursuant to Florida Administrative Code Rule 62-110.106(4), to and including November 1, 1998, in which to file a Petition for Administrative Proceedings in the above-styled matter. Granting of this request will not prejudice either party, but will further both parties' mutual interest by hopefully avoiding the need to actually file a Petition for Administrative Proceeding in this matter. If the Department denies this request, FPC requests the opportunity to file a Petition for Administrative Proceeding within 10 days of such denial.

If you should have any questions, please contact Mr. Scott Osbourn of FPC at (727) 828-4258.

Sincerely,

A handwritten signature in dark ink, appearing to read "W. Jeffrey Pardue", written over a horizontal line.

W. Jeffrey Pardue, C.E.P.
Director, Environmental Services Department
Title V Responsible Official

A handwritten signature in dark ink, appearing to read "Robert A. Manning", written in a cursive style.

Robert A. Manning, Esq.
Hopping Green Sams & Smith

cc: Scott Sheplak, DEP
Jeffrey Brown, DEP OGC

INTEROFFICE MEMORANDUM

Sensitivity: COMPANY CONFIDENTIAL

Date: 01-Oct-1998 10:08am
From: Mary Fillingim TAL
FILLINGIM_M
Dept: Air Resources Management
Tel No: 850/488-0114

To: See Below
Subject: New Posting #0170004

There is a new posting on Florida's website.

0170004004AV
CRYSTAL RIVER POWER PLANT

Draft

The notification letter is encoded and attached. If you have any questions, please feel free to contact me.

Thanks,
Mary

Distribution:

To:	adams yolanda	(adams.yolanda@epamail.epa.gov@in)
To:	pierce carla	(pierce.carla@epamail.epa.gov@in)
To:	Barbara Boutwell TAL	(BOUTWELL_B)
To:	Scott Sheplak TAL	(SHEPLAK_S)
To:	Terry Knowles TAL	(KNOWLES_T)
To:	danois gracy	(danois.gracy@epamail.epa.gov@in)
To:	Elizabeth Walker TAL	(WALKER_E)
To:	Ed Svec TAL	(SVEC_E)

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SEP 29 1998

**BUREAU OF
AIR REGULATION**



September 28, 1998

Mr. Clair Fancy, P.E.
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Rd.
Tallahassee, Florida 32399-2400

Dear Mr. Fancy:

Re: Coal "Briquettes" Fuel

As you discussed with Mike Kennedy last week, Florida Power Corporation (FPC) has been approached by its fuel supplier, Electric Fuels Corporation, concerning the possibility of burning "coal briquettes" at its Crystal River plant. The briquettes are produced from coal fines at the mines that currently supply the coal for Crystal River Units 1, 2, 4, and 5. Coal fines are combined under heat and pressure with a small amount of oil (maximum of 5% Bunker C oil) at the mine. The oil is the binding agent for the coal fines. Subjecting the coal fines to heat and pressure removes moisture and produces the coal briquettes, which are small chunks of coal that can be handled and burned with the regular coal supply.

Attachment 1 contains laboratory analyses of the coal supply for Units 1 and 2 and of an 80%/20% blend of coal and coal briquettes. The coal analysis represents the average coal delivered in 1997. Attachment 2 contains the same comparison for the low-sulfur fuel that is burned in Units 4 and 5. Note that since the briquettes are produced from the same coal supply as that being burned in the Crystal River units, the analyses are virtually identical. Therefore, burning the coal briquettes in Crystal River Units 1, 2, 4, and 5 will not result in an increase in air pollutant emissions.

As discussed in your meeting with Mr. Kennedy, since the Crystal River units are currently permitted to burn coal, oil, and used oil, and the coal briquettes are produced from coal fines at the mine from the same coal supply, FPC requests that the DEP add "coal briquettes" to the list of fuels authorized to be burned in units 1, 2, 4, and 5. Please contact Mike Kennedy at (727) 826-4334 if you have any questions.

Sincerely,



W. Jeffrey Pardue, C.E.P.
Director, Environmental Services
FPC Responsible Official

Attachment 1

Units 1 and 2 Fuel Supply Analysis



Electric
Fuels
Corporation

Coal Analysis Report - Steam Coal

Electric Fuels Corporation

September 1998

Typical FPC "A" Quality
(Based on 1997 Deliveries)

Proximate Analysis

	<u>As Received</u>	<u>Dry Basis</u>
Moisture, %	6.56	***
Ash, %	8.49	9.09
Volatile Matter, %	35.43	37.92
Fixed Carbon, %	49.52	52.99
Sulfur, %	1.09	1.17
Btu/lb.	12691	13582
MAF Btu	14940	
SO ₂ /MBtu	1.72	

Ultimate Analysis

	<u>As Received</u>	<u>Dry Basis</u>
Carbon, %	71.11	76.10
Hydrogen, %	4.72	5.05
Nitrogen, %	1.35	1.45
Oxygen, %	6.68	7.14
Chlorine, %	0.11	0.12

Sulfur Forms

	<u>As Received</u>	<u>Dry Basis</u>
Sulfate	0.01	0.01
Pyritic	0.41	0.45
Organic	0.87	0.71

Mineral Ash Analysis

	<u>Ignited Basis</u>
SiO ₂	52.70
Al ₂ O ₃	29.00
Fe ₂ O ₃	9.20
MgO	1.10
CaO	1.80
K ₂ O	2.10
Na ₂ O	0.45
TiO ₂	1.30
P ₂ O ₅	0.30
SO ₃	1.30
Undetermined	0.75
Base/Acid Ratio	0.18
Slagging Index	0.21
Fouling Index	0.08
Silica Value	81.33
T250 Temperature	2875

Ash Fusion Temperatures

Degrees Fahrenheit

	<u>Reducing</u>	<u>Oxidizing</u>
Initial Deformation	2810	2700 +
Softening	2890	2700 +
Hemispherical	2700 +	2700 +
Fluid	2700 +	2700 +

Hardgrove Grindability Index 43



Electric
Fuels
Corporation

Coal Analysis Report - Steam Coal

Electric Fuels Corporation

September 1998

Proposed "A" Quality

(Based on 1997 Quality blended including 200,000 of coal briquettes)

Proximate Analysis

	<u>As Received</u>	<u>Dry Basis</u>
Moisture, %	6.55	***
Ash, %	8.48	9.07
Volatile Matter, %	35.48	37.97
Fixed Carbon, %	49.49	52.96
Sulfur, %	1.09	1.17
Btu/lb.	12696	13586

MAF Btu	14941
SO2/MBtu	1.72

Ultimate Analysis

	<u>As Received</u>	<u>Dry Basis</u>
Carbon, %	71.12	76.11
Hydrogen, %	4.72	5.06
Nitrogen, %	1.35	1.45
Oxygen, %	6.69	7.14

Chlorine, %	0.11	0.12
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Sulfur Forms

	<u>As Received</u>	<u>Dry Basis</u>
Sulfate	0.01	0.01
Pyritic	0.41	0.45
Organic	0.67	0.71

Mineral Ash Analysis

	<u>Ignited Basis</u>
SiO2	52.71
Al2O3	29.01
Fe2O3	9.20
MgO	1.10
CaO	1.80
K2O	2.10
Na2O	0.45
TiO2	1.30
P2O5	0.30
SO3	1.30
Undetermined	0.73

Base/Acid Ratio	0.18
Slagging Index	0.21
Fouling Index	0.08
Silica Value	81.33
T250 Temperature	2876

Ash Fusion Temperatures

Degrees Fahrenheit

	<u>Reducing</u>	<u>Oxidizing</u>
Initial Deformation	2610	2700 +
Softening	2690	2700 +
Hemispherical	2700 +	2700 +
Fluid	2700 +	2700 +

Hardgrove Grindability Index	43
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This analysis is for informational purposes only and is not intended to represent contractual guarantees.

Analyses provided are typical average values.

Attachment 2

Units 4 and 5 Fuel Supply Analysis



Electric
Fuels
Corporation

Coal Analysis Report - Steam Coal

Electric Fuels Corporation

September 1998

Typical FPC "D" Quality
(Based on 1997 Deliveries)

Proximate Analysis

	<u>As Received</u>	<u>Dry Basis</u>
Moisture, %	7.78	---
Ash, %	9.17	9.94
Volatile Matter, %	33.09	35.88
Fixed Carbon, %	49.98	54.18
Sulfur, %	0.88	0.74
Btu/lb.	12430	13479
MAF Btu	14966	
SO ₂ /MBtu	1.09	

Ultimate Analysis

	<u>As Received</u>	<u>Dry Basis</u>
Carbon, %	69.90	75.80
Hydrogen, %	4.81	5.00
Nitrogen, %	1.34	1.45
Oxygen, %	6.52	7.07
Chlorine, %	0.11	0.12

Sulfur Forms

	<u>As Received</u>	<u>Dry Basis</u>
Sulfate	0.01	0.01
Pyritic	0.11	0.12
Organic	0.56	0.61

Mineral Ash Analysis

	<u>Ignited Basis</u>
SiO ₂	56.50
Al ₂ O ₃	28.80
Fe ₂ O ₃	5.40
MgO	1.20
CaO	1.80
K ₂ O	2.20
Na ₂ O	0.45
TiO ₂	1.40
P ₂ O ₅	0.30
SO ₃	1.40
Undetermined	0.75
Base/Acid Ratio	0.13
Slagging Index	0.09
Fouling Index	0.06
Silica Value	87.08
T ₂₅₀ Temperature	2950

Ash Fusion Temperatures

Degrees Fahrenheit

	<u>Reducing</u>	<u>Oxidizing</u>
Initial Deformation	2690	2700 +
Softening	2700 +	2700 +
Hemispherical	2700 +	2700 +
Fluid	2700 +	2700 +

Hardgrove Grindability Index 42

This analysis is for informational purposes only and is not intended to represent contractual guarantees.

Analyses provided are typical average values.



Electric
Fuels
Corporation

Coal Analysis Report - Steam Coal

Electric Fuels Corporation

September 1998

Proposed FPC "D" Quality

(Based on 1997 Deliveries including 400,000 tons of coal briquettes)

Proximate Analysis

	<u>As Received</u>	<u>Dry Basis</u>
Moisture, %	7.77	***
Ash, %	9.16	9.93
Volatile Matter, %	33.14	35.93
Fixed Carbon, %	49.93	54.14
Sulfur, %	0.68	0.74
Btu/lb.	12435	13483

MAF Btu	14969
SO ₂ /MBtu	1.09

Ultimate Analysis

	<u>As Received</u>	<u>Dry Basis</u>
Carbon, %	69.92	75.81
Hydrogen, %	4.62	5.01
Nitrogen, %	1.34	1.45
Oxygen, %	6.51	7.06

Chlorine, %	0.11	0.12
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Sulfur Forms

	<u>As Received</u>	<u>Dry Basis</u>
Sulfate	0.01	0.01
Pyritic	0.11	0.12
Organic	0.58	0.61

Mineral Ash Analysis

	<u>Ignited Basis</u>
SiO ₂	56.51
Al ₂ O ₃	28.60
Fe ₂ O ₃	5.40
MgO	1.20
CaO	1.80
K ₂ O	2.20
Na ₂ O	0.45
TiO ₂	1.40
P ₂ O ₅	0.30
SO ₃	1.40
Undetermined	0.74

Base/Acid Ratio	0.13
Slagging Index	0.09
Fouling Index	0.06
Silica Value	87.06
T ₂₅₀ Temperature	2950

Ash Fusion Temperatures

Degrees Fahrenheit

	<u>Reducing</u>	<u>Oxidizing</u>
Initial Deformation	2690	2700 +
Softening	2700 +	2700 +
Hemispherical	2700 +	2700 +
Fluid	2700 +	2700 +

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