

Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

November 3, 1995

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Farzie Shelton, Ch.E.
Environmental Coordinator
City of Lakeland
Department of Water and Electric Utilities
501 East Lemon Street
Lakeland, Florida 33801-5050

Dear Ms. Shelton:

Re: City of Lakeland, C.D. McIntosh Unit No. 3
Amendment of Final Determination - PSD-FL-008(B)

Attached is one copy of the Proposed Permit Amendment, Intent to Issue, Public Notice of Intent to Issue Permit Amendment (for publication by the City), and Preliminary Determination for the existing C.D. McIntosh Power Plant Unit No. 3 located in Lakeland, Florida.

Please submit any written comments you may wish to have considered concerning the Department's proposed action to Mr. A. A. Linero, P.E. at the above address. If you have any questions please call me or Mr. Linero at (904)488-1344.

Sincerely,

C.H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/aal/l

Enclosure

cc: J. Harper, EPA
J. Bunyak, NPS
B. Oven, DEP
B. Thomas, SWD
R. Harwood, PCESD
K. Kosky, KBN
A. Morrison, HBSS

SENDER:
 Complete items 1 and/or 2 for additional services.
 Complete items 3 and 4a & b.
 Print your name and address on the reverse of this form so that we can return this card to you.
 Attach this form to the front of the mailpiece, or on the back if space does not permit.
 Write "Return Receipt Requested" on the mailpiece below the article number.
 The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
 1. Addressee's Address
 2. Restricted Delivery
 Consult postmaster for fee.

3. Article Addressed to:
 Farzie Shelton E.C.
 Dept. of Electric & Water Util.
 City of Lakeland
 501 E. Lemon St.
 Lakeland, FL 33801-5050

4a. Article Number:
 2 127 632 565

4b. Service Type:
 Registered Insured
 Certified COD
 Express Mail Return Receipt for Merchandise

7. Date of Delivery:
 11-6-95

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)
 Dominick Brone

PS Form 3811, December 1991, U.S. GPO: 1993-382-714 **DOMESTIC RETURN RECEIPT**

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2 127 632 565



Receipt for Certified Mail

No Insurance Coverage Provided
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PS Form 3800, March 1993

Sent To	
Farzie Shelton	
Street and No.	
City of Lakeland	
P.O., State and ZIP Code	
Lakeland, FL	
Postage	\$
Certified Fee	
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Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
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INTENT TO ISSUE

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CERTIFIED MAIL

In the Matter of an
Application for Permit by:

The City of Lakeland
Department of Electric & Water Utilities
501 East Lemon Street
Lakeland, Florida 33801-5099

DEP File No. PSD-FL-008(B)
Polk County

INTENT TO ISSUE

The Department of Environmental Protection (Department) gives notice of its intent to issue an amendment (copy attached) for the proposed changes as detailed in the application specified above and the Department's Preliminary Determination (copy attached), for the reasons stated below.

The applicant, City of Lakeland Department of Electric and Water Utilities (City), applied on January 4, 1995 (revised April 6 and October 19) to the Department of Environmental Protection for an amendment of the Conditions of Approval related to fuel use contained in the Final Determination (PSD Permit) applicable to the C.D. McIntosh Plant, Unit No. 3. The determination was originally issued by the United States Environmental Protection Agency (EPA) on December 27, 1978, pursuant to 40 CFR 52.21, "Prevention of Significant Deterioration of Air Quality" and was amended by the Department on September 5, 1995 with respect to sulfur dioxide emissions limits.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes, DEP Rule 62-4, F.A.C., and DEP Rule 62-212, F.A.C., "Stationary Source-Preconstruction Review," which incorporates the requirements of 40 CFR 52.21 as part of the EPA-approved Florida State Implementation Plan pursuant to the Clean Air Act. The above actions are not exempt from permitting procedures. The Department has determined that an amendment to the Final Determination is required.

Pursuant to Section 403.815, Florida Statutes and DEP Rule 62-103.150, F.A.C., you (the City) are required to publish at your own expense the enclosed Notice of Intent to Issue Permit Amendment. The notice shall be published one time only within 30 days in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one with significant circulation in the area that may be affected by the permit. If you are uncertain that a newspaper meets these requirements, please contact the department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department, at 2600 Blair Stone Road, Tallahassee, Florida 32399, within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the amendment.

The Department will issue the amendment with the attached conditions unless a petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel and the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of their receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information;

- (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
- (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

- (d) A statement of the material facts disputed by Petitioner, if any;
- (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
- (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and
- (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this intent. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this intent in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Howard L. Rhodes, Director
Division Air Resources Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this **INTENT TO ISSUE** and all copies were mailed by certified mail before the close of business on 11-3-95 to the listed persons.

Clerk Stamp

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.

Karin Ober 11-3-95

Clerk

Date

Copies furnished to:

J. Harper, EPA
J. Bunyak, NPS
H. Oven, DEP
B. Thomas, SWD
R. Harwood, PCESD
K. Kosky, KBN
A. Morrison, HBSS

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF INTENT TO ISSUE PERMIT AMENDMENT

The Department of Environmental Protection (Department) gives notice of its intent to issue an amendment of Permit PSD-FL-008 to the City of Lakeland Department of Electric and Water Utilities (City), 501 East Lemon Street, Lakeland, Polk County, Florida to change certain Conditions of Approval related to fuel use contained in the Final Determination dated December 27, 1978 applicable to the C.D. McIntosh Power Plant, Unit No. 3 as amended on September 5, 1995.

Unit No. 3 is a 364 megawatt electrical power generating unit, equipped with a sulfur dioxide scrubber and mist eliminator as well as an electrostatic precipitator for particulate control. In accordance with the current PSD permit, coal or refuse may be continuously burned as fuel in Unit No. 3 while oil may be burned during malfunction of the coal feed equipment or malfunction of the exhaust gas scrubber. The amendment will permit:

- o Co-firing of 20 percent petroleum coke (a solid fossil fuel) with coal.
- o Firing low sulfur fuel oil or low sulfur fuel oil and refuse at any time.
- o Firing natural gas at any time.

The Department has determined, or included provisions to insure that, there will no increases in air pollutants including sulfur dioxide, nitrogen oxides, carbon monoxide, particulate matter and sulfuric acid mist as a result of the above operational changes. Since there will be no increases in pollutant emissions, the changes are not subject to review for Prevention of Significant Deterioration of Air Quality or a Best Available Control Technology Determination.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information; (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

The application 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:

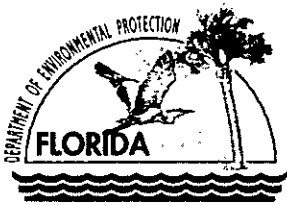
Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Contact: A.A. Linero (904)488-1344

Department of Environmental Protection
Southwest District
8407 Laurel Fair Circle
Tampa, Florida 33619
Telephone: (813)744-6100

Polk County ESD
330 W. Church Street
Bartow, Florida 33830
Telephone: (813)534-7377

Any person may send written comments on the proposed action to Administrator, New Source Review Section, at the Department of Environmental Protection, Division of Air Resources Management, 2600 Blair Stone Road - Mail Station 5505, Tallahassee, Florida 32399-2400. All comments received within 30 days of the publication of this notice will be considered in the Department's final determination.

Further, a public hearing can be requested by any person(s). Such requests must be submitted within 30 days of this notice.



Department of Environmental Protection

DRAFT

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

November XX, 1995

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Farzie Shelton, Ch.E.
Environmental Coordinator
City of Lakeland
Department of Water and Electric Utilities
501 East Lemon Street
Lakeland, Florida 33801-5050

Dear Ms. Shelton:

Re: City of Lakeland, C.D. McIntosh Unit No. 3
Amendment of Final Determination - PSD-FL-008(B)

The Department hereby amends the Conditions of Approval related to sulfur dioxide (SO₂) emissions and fuel use in the subject Final Determination (dated December 27, 1978) pursuant to 40 CFR 52.21 - Prevention of Significant Deterioration (PSD Permit). The PSD Permit, previously amended on Septemeber 5, 1995, is amended as follows:

Condition 1.A.

From:

Particulate matter emitted into the atmosphere from the boiler shall not exceed:

<u>Mode of Firing</u>	<u>lb/10⁶ Btu Heat Input</u>
Coal	0.044
Coal/Refuse	0.050
Oil	0.070
Oil/Refuse	0.075

DRAFT

Ms. Farzie Shelton
November XX, 1995
Page Two

To:

Particulate matter emitted into the atmosphere from the boiler shall not exceed:

<u>Mode of Firing</u>	<u>lb/10⁶ Btu Heat Input</u>
Coal	0.044
Coal/Petcoke	0.044
Coal/Refuse	0.050
Coal/Petcoke/Refuse	0.050
Oil	0.070
Oil/Refuse	0.075

Condition 2.B.

From:

A flue gas desulfurization system will be installed to treat exhaust gases and will operate such that whenever coal is burned, sulfur dioxide in gases discharged to the atmosphere from the boiler shall not exceed 1.2 pounds per million Btu heat input and 10 percent of the potential combustion concentration (90 percent reduction), or 35 percent of the potential combustion concentration (65 percent reduction), when emissions are less than 0.75 pounds per million Btu heat input. Compliance with the sulfur dioxide emission limitation and percent reduction requirement shall be determined on a 30-day rolling average.

To:

A flue gas desulfurization system will be installed to treat exhaust gases and will operate such that whenever coal or blends of coal and petroleum coke or refuse are burned, sulfur dioxide in gases discharged to the atmosphere from the boiler shall not exceed 1.2 pounds per million Btu heat input and 10 percent of the potential combustion concentration (90 percent reduction), or 35 percent of the potential combustion concentration (65 percent reduction), when emissions are less than 0.75 pounds per million Btu heat input. Compliance with the sulfur dioxide emission limitation of 0.75 pound per million Btu heat input and percent reduction requirement shall be determined on a 30-day rolling average and submitted to the Department on a quarterly basis. Whenever blends of coal and petroleum coke or refuse are burned, sulfur dioxide emissions shall not exceed 0.718 pounds per million Btu heat input based on a 30-day rolling average.

DRAFT

Ms. Farzie Shelton
November XX, 1995
Page Three

Condition 2.E. (new)

Continuous burning of natural gas, low sulfur fuel oil (less than or equal to 0.5 percent sulfur by weight), or combinations of these two fuels with or without the use of the SO₂ scrubber will be allowed.

Condition 5.B.

From:

Performance tests shall be conducted and data reduced in accordance with methods and procedures specified by EPA. Reference methods 1 through 5 as published in Appendix A of 40 CFR 60 will be used for particulate matter tests. Reference method 6 will be used for SO₂ tests. Method 7 will be used for NO_x tests.

To:

Performance tests shall be conducted and data reduced in accordance with methods and procedures specified by EPA. Reference methods 1 through 5 as published in Appendix A of 40 CFR 60 will be used for particulate matter tests. Reference method 6 or 6C will be used for SO₂ tests. Method 7 or 7E will be used for NO_x tests.

Condition 6. Continuous Monitoring Requirements

From:

Continuous monitors shall be installed and operated in accordance with 40 CFR 60.45 and 60.13. In addition, an ASTM-certified automatic coal sampler shall be installed which produces a representative daily sample for analysis of sulfur, moisture, heating value and ash. The coal analysis data shall be used in conjunction with emission factors and the continuous monitoring data to calculate SO₂ reduction.

To:

Continuous monitors shall be installed and operated in accordance with 40 CFR 60.45 and 60.13. In addition, an ASTM-certified automatic **solid fuel** sampler shall be installed which produces a representative daily sample for analysis of sulfur, moisture, heating value and ash. The **solid fuel** analysis data shall be used in conjunction with emission factors and the continuous monitoring data to calculate SO₂ reduction.

DRAFT

Ms. Farzie Shelton
November XX, 1995
Page Four

Condition 8 (new)

The following fuels may be burned:

Coal only

Low sulfur fuel oil only (\leq 0.5 percent sulfur by weight)

Coal and up to 10 percent refuse (based on heat input)

Low sulfur fuel oil and up to 10 percent refuse (based on heat input)

Coal and up to 20 percent petroleum coke (based on weight)

Coal and up to 20 percent petroleum coke (based on weight) and 10 percent refuse (based on heat input)

Natural gas

Condition 9 (new)

The City shall maintain and submit to the Department on an annual basis for a period of five years from the date the unit is initially co-fired with petroleum coke, information demonstrating in accordance with 40 CFR 52.21 (b)(33) and 40 CFR 52.21 (b)(21)(v) that the operational changes did not result in emissions increases of carbon monoxide, nitrogen oxides, or sulfuric acid mist.

A copy of this amendment letter shall be attached to and shall become a part of Permit PSD-FL-008.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Howard L. Rhodes, Director
Division Air Resources Management

DRAFT

Ms. Farzie Shelton
November 10, 1995
Page Five

CERTIFICATE OF SERVICE

This is to certify that this **PERMIT AMENDMENT** and all copies were mailed to the listed persons before the close of business on _____.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to Chapter 120.52(9), Florida Statutes, with the designated Deputy Clerk, receipt of which is hereby acknowledged.

Clerk

Date

cc: J. Harper, EPA
J. Bunyak, NPS
B. Oven, DEP
B. Thomas, SWD
R. Harwood, PCESD
K. Kosky, KBN
A. Morrison, HGSS

Preliminary Determination

City of Lakeland
Department of Water and Electric Utilities
C. D. McIntosh Power Plant Unit No. 3
Lakeland, Florida
Polk County

Electric Utility Steam Generating Unit
Solid and Liquid Fuel - Fired Boiler
364 MW

Permit No. PSD-FL-008(B)

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation

November 3, 1995

A. Applicant

City of Lakeland
Department of Water and Electric utilities
501 East Lemon Street
Lakeland, Florida 33801-5050

B. Source

C. D. McIntosh Power Plant
Unit No. 3 - 364 MW
Lakeland, Polk County

C. Request

On January 4, 1995, the City of Lakeland (City) submitted a request (Attachment 1) for an amendment to Permit PSD-FL-008 originally issued by the United States Environmental Protection Agency (EPA) on December 27, 1978 and applicable to the City's C.D. McIntosh Power Plant Unit No. 3 (Unit 3) in Lakeland, Florida. The requested amendments to EPA's Final Determination were:

- o Adjust particulate matter limits to 0.1 pounds per million Btu (Lb/mmBtu) heat input regardless of fuel;
- o Clarify that the minimum sulfur dioxide removal efficiency of 85 percent applies only when high sulfur coal is burned;
- o Delete the requirement to install an SO₂ monitor at the inlet to the scrubber, since the monitor at the stack is sufficient for use in determining SO₂ removal efficiencies;
- o Recognize that natural gas and low sulfur fuel oil may be used as startup fuels or at any other time; and
- o Allow co-firing of petroleum coke (petcoke) with other fuels following a successful test burn.

Permit Amendment PSD-FL-008A (Attachment 2) was issued on September 5, 1995 following publication of the Department's Notice of Intent. The amendment addressed the first three requests above with substantial changes by the Department. The issues related to burning of petcoke, natural gas and low sulfur fuel oil were deferred and are the subject of the present request submitted by the City on October 19, 1995.

The changes to PSD-FL-008 and PSD-FL-008A requested by the City are as follows:

Condition 2.B.

From:

A flue gas desulfurization system will be installed to treat exhaust gases and will operate such that whenever coal is burned, sulfur dioxide in gases discharged to the atmosphere from the boiler shall not exceed 1.2 pounds per million Btu heat input and 10 percent of the potential combustion concentration (90 percent reduction), or 35 percent of the potential combustion concentration (65 percent reduction), when emissions are less than 0.75 pounds per million Btu heat input. Compliance with the sulfur dioxide emission limitation and percent reduction requirement shall be determined on a 30-day rolling average.

To:

A flue gas desulfurization system will be installed to treat exhaust gases and will operate such that whenever coal is burned, sulfur dioxide in gases discharged to the atmosphere from the boiler shall not exceed 1.2 pounds per million Btu heat input and 10 percent of the potential combustion concentration (90 percent reduction), or 35 percent of the potential combustion concentration (65 percent reduction), when emissions are less than 0.75 pounds per million Btu heat input. Compliance with this sulfur dioxide emission limitation and percent reduction requirement shall be determined on a 30-day rolling average (based on days when no petroleum coke is burned). Whenever petroleum coke is burned, sulfur dioxide emissions shall not exceed 0.718 lb/mmBtu (based on a 30-day rolling average) or 7948 tons per year.

Condition 8 (new)

The following fuels may be burned:

Coal only

Oil only

Coal and up to 10 percent refuse (based on heat input)

Oil and up to 10 percent refuse (based on heat input)

Coal and up to 20 percent petroleum coke (based on weight)

Coal and up to 20 percent petroleum coke (based on weight) and 10 percent refuse (based on heat input)

Natural gas

Low sulfur fuel oil (e.g. diesel)

D. Justification

The City justifies its request to burn petcoke on its analysis indicating that it is possible to do so without increasing actual emissions of key regulated pollutants including carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen oxides (NO_x), sulfuric acid mist (H₂SO₄) and particulate matter (PM). The analysis is included in the City's application and as Attachment 3 to this review.

To insure there are no increases in SO₂ from the higher sulfur petcoke, the City proposes to limit emissions to what they would have been during the past two years while operating under the most recent PSD permit. The City proposes to accomplish this by taking federally enforceable limits of 0.718 lb/mmBtu and 7948 tons per year (TPY) of SO₂. The City believes there will be no increases in CO, H₂SO₄, NO_x, and PM due to firing of petcoke.

In the case of CO, H₂SO₄, and PM, these conclusions are based on comparisons of emissions when burning high sulfur coal with emissions when burning high sulfur coal and petcoke. The inferences were then assumed to apply for comparisons of low sulfur coal emissions with low sulfur coal and petcoke emissions. The conclusions regarding NO_x and SO₂ are clearly based on comparisons between the present low sulfur coal burning case and future low sulfur and petcoke fuel use scenario.

At present burning of oil or a combination of oil and refuse is allowed by the PSD permit during malfunctions of coal feeding equipment "only if all flue gases are fully scrubbed by the SO₂ scrubber." The same fuels can be burned during emergencies when the scrubber system malfunctions. Under either condition, SO₂ "emitted to the atmosphere shall not exceed 0.8 pound per million Btu." No specific justification (e.g. substantiation that emissions will not increase during combustion of oil) was provided to allow for continuous operation while firing oil or a combination of oil and refuse.

There are no provisions in the existing permit allowing use of natural gas. The City wishes to utilize gas as a "startup fuel" and for use at any time. Its use is justified by the City as a "clean fuel." The City specifically requested use of "low sulfur fuel oil (e.g. diesel)" as a startup fuel or at any time. The City also justified its use as a clean fuel.

E. Rule Applicability

The most important rules potentially applicable to this facility under this review are:

- o 40 CFR 60 - Standards of Performance for New Stationary Sources, Subpart D - "Standards of Performance for Electric Utility Steam Generating Units for Which Construction Is Commenced After August 17, 1971," (NSPS Subpart D) adopted in Chapter 62-296, Florida Administrative Code (F.A.C.).
- o 40 CFR 52.21 - "Prevention of Significant Deterioration of Air Quality," (PSD Rules) adopted in Chapter 62-212, F.A.C.
- o Chapter 62-297, F.A.C., related to emission monitoring at stationary sources.
- o Florida Electrical Power Plant Siting, Chapter 62-17, F.A.C. and Sections 403.501-519, Florida Statutes (F.S.).

The present request is a modification of the existing PSD permit and Site Certification. Here modification means a change in the permit and not necessarily an increase in emissions such that PSD rules are triggered. Matters related to Site Certification will be handled separately after approval of any changes in the PSD permit to insure that conditions remain at least as strict as those given in the PSD permit.

In 1992, EPA amended the PSD rules to account for several court decisions known as the Puerto Rican Cement and WEPCO decisions. Florida recently adopted these changes within Chapter 62-212, F.A.C. The key provisions applicable to this review relate to a new method for determining if a net emissions increase takes place following a physical or operational change. The PSD rules now require a comparison of past actual emissions with future actual emissions rather than with future potential emissions when determining PSD applicability for electric utility units.

The Department will use the most recent definitions in this permitting action as well as the reporting requirements as necessary to insure that PSD rules are not triggered by future actual operation of Unit 3. These are:

Actual emissions - (such as "present actuals"). The average rate in tons per year, at which the emissions unit actually emitted the pollutant during a two year period which precedes the particular date and which is representative of the normal operation of the emissions unit. The Department may allow the use of a different time period upon a determination that it is more representative of the normal operation of the emissions unit's actual operating hours, production rates and types of materials processed, stored, or combusted during the selected time period.

Actual emissions - (such as "future actuals"). The **representative actual annual emissions** of the unit following the change provided the owner or operator maintains and submits to the Department on an annual basis for a period of five years from the date the unit resumes regular operation, information demonstrating that the physical or operational change did not result in an emissions increase, etc.

Representative actual annual emissions - (adopted from 40 CFR 52.21). The average rate, in tons per year, at which the source is projected to emit a pollutant for the two-year period after a physical change or change in method of operation of a unit, considering the effect any such change will have on increasing or decreasing the hourly emissions rate and on projected capacity utilization. In projecting future emissions the Administrator (in this case the Department) shall:

(i) Consider all relevant information, including but not limited to, historical operational data, the company's own representations, filings with the State or Federal regulatory authorities, and compliance plans under title IV of the Clean Air Act; and

(ii) Exclude, in calculating any increase in emissions that results from the particular physical change or change in the method of operation at an electric utility steam generating unit, that portion of the unit's emissions following the change that could have been accommodated during the representative baseline period and is attributable to an increase in projected capacity utilization at the unit that is unrelated to the particular change, including any increased utilization due to the rate of utility demand growth for the utility system as a whole.

F. Evaluation of Application

The test program conducted by the City to determine changes due to petcoke burning involved comparison of emissions under the following scenarios:

- o High sulfur coal only
- o High sulfur coal and 10 percent petcoke
- o Low sulfur coal and 20 percent petcoke

Wherever possible, tests reflective of recent operation while in compliance with applicable limits must form the basis for comparison with emissions after the changes. No tests were conducted during the test program to reflect the usual low sulfur coal (without petcoke) baseline conditions. Therefore baseline emissions (present actuals) originally estimated by the City were

based on conditions which did not reflect recent operation. Also they were not (in the opinion of the Department) operating within the SO₂ emission limits applicable to Unit 3 before or after the recent permit amendment. Therefore the data cannot be used to establish present actual emissions (prior to the requested changes). They are still useful, however, in projecting future actual emissions for some pollutants and drawing inferences about the likely effects of using petcoke.

In the case of SO₂, the low sulfur coal burning condition is adequately simulated by the assumption that while operating at recent capacity utilization and recent low sulfur coal use, emissions were equal to the allowable emissions in the recently revised permit. Future SO₂ emissions are within the control of the City because they are able to control the operation of the scrubber to insure there is no increase in actual emissions of SO₂. Therefore it is reasonable to accept the City's conclusion that there will be no increase in actual SO₂ emissions when burning low sulfur coal and petcoke compared with burning low sulfur coal alone.

In the case of NO_x and PM, there are sufficient historical compliance tests under low sulfur coal burning conditions to compare with future low sulfur coal and petcoke conditions. Based on tests conducted in 1992-1994, the average NO_x emissions based on compliance tests were 0.410 lb/mmBtu compared to 0.0413 lb/mmBtu for the low sulfur coal with 10 percent petcoke test burn. Similarly, PM emissions averaged 0.024 lb/mmBtu during the same period while burning low sulfur coal compared with 0.0141 during the low sulfur coal and petcoke tests. Thus it is reasonable to accept the City's assertion that there will be no increase in actual emissions of PM or NO_x.

In the case of CO and H₂SO₄, the City is relying on inferences made between tests conducted while burning high sulfur coal and tests while burning high sulfur coal and petcoke to show there is no statistical increase when burning petcoke. The Department previously suggested that the City conduct the relatively inexpensive CO and H₂SO₄ tests while burning only low sulfur coal (to compare with firing low sulfur coal and petcoke) to definitively prove the inferences. The data have not yet been provided. The Department will accept the inferences made by the City on the condition that tests will be conducted to establish these "present actual emissions" while firing low sulfur coal before the operational change to petcoke use.

The request to allow oil and oil with refuse firing at any time, is incomplete because it appears that under a scenario where only oil is fired, there could be SO₂ emissions increases. This is because the limit of 0.80 lb/mmBtu while firing oil or oil and refuse is greater than the proposed emission limit while firing low sulfur coal and petcoke. The provision requiring that exhaust gases be "fully scrubbed" may suffice to insure that there can be no increase due to possible (though unlikely) exclusive use of oil

or oil with refuse. However a lower limit, a specific SO₂ removal requirement, or a maximum sulfur content should be included and would likely have been included by EPA if the City had planned continuous oil or oil and refuse firing when Unit 3 was originally permitted.

The request to fire natural gas or low sulfur fuel oil (e.g.) diesel as startup fuels or anytime is reasonable because they are inherently less polluting fuels. In this case the Department does not need to require scrubbing if the City can use a very low sulfur fuel oil.

G. Revised Determination

Based on the Department's review of the City's application, subsequent clarifications the applicable rules, and the existing permit conditions, the following changes are proposed in the Unit 3 PSD permit:

Condition 1.A.

From:

Particulate matter emitted into the atmosphere from the boiler shall not exceed:

<u>Mode of Firing</u>	<u>lb/10⁶ Btu Heat Input</u>
Coal	0.044
Coal/Refuse	0.050
Oil	0.070
Oil/Refuse	0.075

To:

Particulate matter emitted into the atmosphere from the boiler shall not exceed:

<u>Mode of Firing</u>	<u>lb/10⁶ Btu Heat Input</u>
Coal	0.044
Coal/Petcoke	0.044
Coal/Refuse	0.050
Coal/Petcoke/Refuse	0.050
Oil	0.070
Oil/Refuse	0.075

Condition 2.B.

From:

A flue gas desulfurization system will be installed to treat exhaust gases and will operate such that whenever coal is burned, sulfur dioxide in gases discharged to the atmosphere from the boiler shall not exceed 1.2 pounds per million Btu heat input and 10 percent of the potential combustion concentration (90 percent reduction), or 35 percent of the potential combustion concentration (65 percent reduction), when emissions are less than 0.75 pounds per million Btu heat input. Compliance with the sulfur dioxide emission limitation and percent reduction requirement shall be determined on a 30-day rolling average.

To:

A flue gas desulfurization system will be installed to treat exhaust gases and will operate such that whenever coal or blends of coal and petroleum coke or refuse are burned, sulfur dioxide in gases discharged to the atmosphere from the boiler shall not exceed 1.2 pounds per million Btu heat input and 10 percent of the potential combustion concentration (90 percent reduction), or 35 percent of the potential combustion concentration (65 percent reduction), when emissions are less than 0.75 pounds per million Btu heat input. Compliance with the sulfur dioxide emission limitation of 0.75 pound per million Btu heat input and percent reduction requirement shall be determined on a 30-day rolling average and submitted to the Department on a quarterly basis. Whenever blends of coal and petroleum coke or refuse are burned, sulfur dioxide emissions shall not exceed 0.718 pounds per million Btu heat input based on a 30-day rolling average.

Condition 2.E. (new)

Continuous burning of natural gas, low sulfur fuel oil (less than or equal to 0.5 percent sulfur by weight), or combinations of these two fuels with or without the use of the SO₂ scrubber will be allowed.

Condition 5.B.

From:

Performance tests shall be conducted and data reduced in accordance with methods and procedures specified by EPA. Reference methods 1 through 5 as published in Appendix A of 40 CFR 60 will be used for particulate matter tests. Reference method 6 will be used for SO₂ tests. Method 7 will be used for NO_x tests.

To:

Performance tests shall be conducted and data reduced in accordance with methods and procedures specified by EPA. Reference methods 1 through 5 as published in Appendix A of 40 CFR 60 will be used for particulate matter tests. Reference method 6 or 6C will be used for SO₂ tests. Method 7 or 7E will be used for NO_x tests.

Condition 6. Continuous Monitoring Requirements

From:

Continuous monitors shall be installed and operated in accordance with 40 CFR 60.45 and 60.13. In addition, an ASTM-certified automatic coal sampler shall be installed which produces a representative daily sample for analysis of sulfur, moisture, heating value and ash. The coal analysis data shall be used in conjunction with emission factors and the continuous monitoring data to calculate SO₂ reduction.

To:

Continuous monitors shall be installed and operated in accordance with 40 CFR 60.45 and 60.13. In addition, an ASTM-certified automatic **solid fuel** sampler shall be installed which produces a representative daily sample for analysis of sulfur, moisture, heating value and ash. The **solid fuel** analysis data shall be used in conjunction with emission factors and the continuous monitoring data to calculate SO₂ reduction.

Condition 8 (new)

The following fuels may be burned:

Coal only

Low sulfur fuel oil only (\leq 0.5 percent sulfur by weight)

Coal and up to 10 percent refuse (based on heat input)

Low sulfur fuel oil and up to 10 percent refuse (based on heat input)

Coal and up to 20 percent petroleum coke (based on weight)

Coal and up to 20 percent petroleum coke (based on weight) and 10 percent refuse (based on heat input)

Natural gas

Condition 9 (new)

The City shall maintain and submit to the Department on an annual basis for a period of five years from the date the unit is initially co-fired with petroleum coke, information demonstrating in accordance with 40 CFR 52.21 (b)(33) and 40 CFR 52.21 (b)(21)(v) that the operational changes did not result in emissions increases of carbon monoxide, nitrogen oxides, or sulfuric acid mist.

H. Other Issues

As previously discussed, the determination that there will be no increases in sulfuric acid mist or carbon monoxide emissions due to burning petcoke was based on inferences made between tests conducted while burning high sulfur coal and tests conducted while burning high sulfur fuel oil and petcoke. The Department accepted the inferences though not necessarily the statistical methods by which they were reached.

However in order to satisfy the reporting requirements of the new Condition 9, it will be necessary for the City to provide baseline test data for these two pollutants when burning low sulfur coal because that has been the "baseline fuel" in recent years. The Department has a good basis to require this confirmatory information based on the results of petcoke testing at other plants and articles which indicate likely increases in these pollutants when burning petcoke.

Rather than include a specific test requirement while burning low sulfur coal, the Department has asked the City to review past historical tests to see if they already have such data before conducting new baseline tests. If additional baseline testing is required, it is inexpensive to conduct for the pollutants of interest.

I. Conclusion

The changes in operation allowed by this permit amendment are not expected to cause an increase in emissions of air pollutants. The changes will not result in any increases in ambient concentrations of any air pollutants or cause or contribute to a violation of any ambient air quality standard or allowable increment.

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