

Department of Environmental Protection

AL's
copy

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

July 11, 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: Amendment of PSD-FL-008
City of Lakeland, C.D. McIntosh Unit No. 3

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 Technical Evaluation 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: B. Thomas, SWD
J. Harper, EPA
J. Bunyak, NPS
L. Novak, PCESD
K. Kosky, KBN
Buck Oven, DEP

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-008A
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 Technical Evaluation (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, 1995) to the Department of Environmental Protection for an amendment of the Conditions of Approval related to sulfur dioxide (SO₂) emissions limits 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." The Department proposes to amend the nitrogen oxides (NO_x) emissions limits contained in the same PSD permit as well as the method to demonstrate compliance with the NO_x and SO₂ Limits.

The Department has permitting jurisdiction under F.A.C. 62-212, "Stationary Source-Preconstruction Review," which incorporates the requirements of 40 CFR 52.21 pursuant to delegation of authority for the program by EPA to the Department. 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 of 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



C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399
904-488-1344

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 7-11-95 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.

Kenn Johnson 7-11-95
Clerk Date

Copies furnished to:

B. Thomas, SW District
L. Novak, PCESD
J. Harper, EPA
J. Bunyak, NPS
H. Oven, PPS
K. Kosky, KBN

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF INTENT TO ISSUE PERMIT AMENDMENT
PSD-FL-008A

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) to change certain Conditions of Approval related to sulfur dioxide (SO₂) and nitrogen oxides (NO_x) emission limits contained in the Final Determination dated December 27, 1978 applicable to the C.D. McIntosh Power Plant, Unit No. 3.

The minimum sulfur dioxide (SO₂) removal efficiency requirement when burning coal will be changed from 85 percent to:

- o 1.2 lb/million Btu and 10 percent of the potential combustion concentration (90 percent reduction), or
- o 35 percent of the potential combustion concentration (65 percent reduction), when emissions are less than 0.75 lb/million Btu.

The method for calculating SO₂ removal efficiency will be changed from continuous monitors before and after the scrubber to analysis of fuel together with continuous SO₂ monitoring after the scrubber.

The NO_x emission limit when firing coal or coal/refuse will be reduced from 0.7 lb/million Btu to 0.60 lb/million Btu.

Compliance with applicable NO_x and SO₂ limits will be demonstrated on a 30 day rolling average basis as well as by annual performance tests.

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 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

Department of Environmental Protection
Southwest District
8407 Laurel Fair Circle
Tampa, Florida 33619

Polk County ESD
330 W. Church Street
Bartow, Florida 33830

Any person may send written comments on the proposed action to Administrator, New Source Review 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

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
August XX, 1995

Virginia B. Wetherell
Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

DRAFT

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

The Department hereby amends the Conditions of Approval related to sulfur dioxide (SO₂) and nitrogen oxides (NO_x) emissions in the subject Final Determination pursuant to 40 CFR 52.21 - Prevention of Significant Deterioration (PSD Permit). The PSD Permit is amended as follows:

Condition 2.B.

From:

A flue gas desulfurization system will be installed to treat all exhaust gases and will operate at a minimum SO₂ removal efficiency of 85 percent whenever coal is burned.

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 the sulfur dioxide emission limitation and percent reduction requirement shall be determined on a 30-day rolling average.

Ms. Farzie Shelton
August XX, 1995
Page Two

DRAFT

Condition 4.A.

From:

NO_x emitted to the atmosphere from the boiler shall not exceed 0.7 pound per million Btu heat input when firing coal or coal/refuse.

To:

NO_x emitted to the atmosphere from the boiler shall not exceed 0.60 pounds per million Btu heat input from coal or coal/refuse on a 30-day rolling average basis.

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, a continuous SO₂ monitor shall be installed prior to the flue gas desulfurization system for the purposes of calculating SO₂ removal efficiencies.

To:

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.

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 (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the applicant of the amendment request/application and the parties listed below must be filed within 14 days of receipt of this amendment. Petitions filed by other persons must be filed within 14 days of the amendment issuance or within 14 days of their receipt of this amendment, whichever occurs first. 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, F.S.

DRAFT

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 the 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 amendment. Persons whose substantial interests will be affected by any decision of the Department with regard to the amendment request/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 amendment 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, Florida Administrative Code.

DRAFT

Ms. Farzie Shelton
August XX, 1995
Page Four

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

Virginia B. Wetherell, Secretary

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 August XX, 1995.

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: B. Thomas, SWD
L. Novak, PCESD
J. Harper, EPA
J. Bunyak, NPS
H. Oven, PPS

Technical Evaluation
and
Preliminary Evaluation

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 Fossil Fuel/Municipal Refuse/Oil - Fired Boiler
364 MW

Permit No. PSD-FL-008A

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

July 10, 1995

I. General Information

A. Applicant

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

B. Request

On January 4, 1995, the City of Lakeland (City) submitted a request (Attachment 1) for an amendment to Permit PSD-FL-008A 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 (SO₂) 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 with other fuels following a successful test burn.

On April 6, 1995, the City submitted a modification (Attachment 2) of its original submittal excluding the issues related to particulate matter, SO₂ monitoring, natural gas, and low sulfur oil while deferring the issue of petcoke co-firing. The modification addressed only the revision of Condition of Approval 2.B. of the Final Determination which the City requested to amend as follows:

From: A flue gas desulfurization system will be installed to treat all exhaust gases and will operate at a minimum SO₂ removal efficiency of 85 percent whenever coal is burned.

To: A flue gas desulfurization system will be designed to treat exhaust gases. The FGD system will operate at: (1) A minimum SO₂ removal efficiency of 85 percent whenever high sulfur (i.e. 3.3 percent or greater) coal is burned, or (2) a minimum of 55 percent SO₂ removal efficiency when the SO₂ emissions are 0.9 lb/mmBtu or less. The sulfur dioxide emissions from the unit shall not exceed 0.9 lb/mmBtu based on a 30-day rolling average.

C. Justification

The City justified its request on the premise that the Final Determination made by EPA in 1978 was based on applicability of 40 CFR Part 60 - Standards of Performance for New Stationary Sources, Subpart Da - Standards of Performance for Electric Utility Steam Generating Units for Which Construction Is Commenced After September 18, 1978 (NSPS Subpart Da). The City received a review from EPA dated March 9, 1979 (Attachment 3) wherein the Regional Counsel concludes that Unit 3 is not subject to Subpart Da.

D. Rule Applicability

The City inferred that the earlier NSPS Subpart D (applicable to units for which construction commenced after August 17, 1971) and the information contained in its application (submitted before Subpart Da was proposed) are the applicable requirements. In summary, these are a maximum SO₂ emission limit of 1.2 lb/mmBtu and 80 percent SO₂ removal efficiency when burning high sulfur (greater than 3.3 percent) coal. The City apparently believed that the Best Available Control Technology (BACT) determination (based on a proposed version of Subpart Da) was annulled by the opinion of EPA's Regional Counsel. Following the Department's opinion to the contrary, the City requested that the Department first amend the Final Determination (PSD Permit) prior to addressing the petcoke request.

The Department reviewed the correspondence, the Preliminary and Final Determinations, EPA Guidelines for conducting BACT reviews, EPA Guidance memos, etc. and concludes that the opinion of EPA's Regional Counsel did not invalidate the case-by-case BACT determination or the related Conditions of Approval contained in the PSD Permit which was pursuant to implementation of Section 165 of the 1977 Clean Air Act Amendments (CAAA's). The Department agrees that Subpart Da is not applicable, therefore Unit 3 does not presently need to comply with its provisions except those which were included in the PSD Permit or required by Subpart D.

Although Subpart Da does not apply, according to a memo (Attachment 4) dated November 15, 1978, EPA clearly expected case-by-case BACT reviews made by its regional offices after the date of the proposed Subpart Da (September 18, 1978) to reflect that level of control technology (85 percent SO₂ scrubbing efficiency) even if project applications were received prior to date of the proposed Subpart Da. The memo afforded applicants the opportunity to "present evidence of unusual circumstances which justify less control."

The federal rules under which the PSD Permit was issued were adopted by the Department pursuant to Chapter 403, Florida Statutes, and included in Chapters 62-4, 62-210, 62-212, 62-272, 62-275, 62-296, and 62-297 of the Florida Administrative Code. Accordingly, EPA delegated PSD Permitting authority to the Department.

E. Historical Operation of Unit 3

Since startup in 1982, the unit has primarily burned relatively low sulfur coal. Tests conducted in 1992, 1993, and 1994 (Attachment 5) indicated compliance with the maximum emission limits given in the PSD Permit for nitrogen oxides (NOx), and SO₂. SO₂ emissions were 0.65, 0.35, and 0.62 lb/mmBtu for the three years respectively. NOx emissions were under 0.5 lb/mmBtu compared with the PSD Permit limitation of 0.7 lb/mmBtu.

Data from 1994 (Attachment 6) indicate that the scrubbing efficiency (including by-pass for re-heat) ranged from 40 to 70 percent. This equates to overall SO₂ potential emission reduction of 45 to 75 percent including sulfur retention in the ash. While awaiting a decision, the City is operating the scrubber at 85 percent SO₂ removal efficiency while burning relatively low sulfur coal. However, more lime is used, more sludge is generated and stack re-heat is accomplished at substantial cost. Also there is no spare scrubbing capacity to provide for malfunctioning of the flue gas desulfurization (FGD) system.

F. Revised Determination

The SO₂ BACT determined by EPA was based on the more stringent proposed NSPS Da requirements of September 18, 1978 rather than the less stringent final version issued June 11, 1979. By its memo of January 10, 1979 (Attachment 7), the EPA Office of Air Quality Planning and Standards (OAQPS) directed Regions to review BACT determinations made between the time NSPS Subpart Da was issued and finalized to determine if "alternative (less stringent) controls would be more appropriate." It also reiterated that where the final version is more stringent than the proposed one, the more stringent controls would need to be incorporated into revised BACT determinations.

Based on the above, the BACT for Unit 3 would likely have been revised to account for the less stringent SO₂ requirements of the final Subpart Da if it was subject to Subpart Da provisions. Because the BACT was based on the proposed Subpart Da, it is logical to assume that the BACT can be reconsidered in light of the the EPA directive. Considering the non-applicability of Subpart Da BACT determinations made for similarly affected units, and the existing equipment serving Unit 3, the Department proposes to revise the SO₂ emissions limitations in the PSD permit as follows:

Condition 2.B.

From:

A flue gas desulfurization system will be installed to treat all exhaust gases and will operate at a minimum SO₂ removal efficiency of 85 percent whenever coal is burned.

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 lb/mmBtu 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 lb/mmBtu heat input. Compliance with the sulfur dioxide emission limitation and percent reduction requirements shall be determined on a 30-day rolling average.

EPA set a BACT emission limit for NO_x at 0.7 lb/mmBtu which is higher than the proposed or final Subpart Da requirement of 0.60 lb/mmBtu. The reason given by EPA was that the applicant would incur significant time delays if the requirement of Subpart Da (whether applicable or not) was imposed. Based on the compliance test results provided by the City, the Department considers a more stringent limit to be appropriate and proposes a change as follows:

Condition 4.A.

From:

NO_x emitted to the atmosphere from the boiler shall not exceed 0.7 lb/mmBtu heat input when firing coal or coal/refuse.

To:

NO_x emitted to the atmosphere from the boiler shall not exceed 0.60 lb/mmBtu heat input from coal or coal/refuse on a 30-day rolling average basis.

Between the proposed and final Subpart Da, the basis for calculating SO₂ removal was changed from scrubbing efficiency to overall reduction of sulfur dioxide concentration potential including consideration of retention is ash. The Department proposes to change the scrubber inlet monitoring requirement to one which determines fuel sulfur content. The Department proposes to change the the present requirement as follows:

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, a continuous SO₂ monitor shall be installed prior to the flue gas desulfurization system for the purpose of calculating SO₂ removal efficiencies.

To:

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.

G. Cost, Energy and Other Environmental Impacts

The Department reviewed impact information provided by the City. It is summarized in Attachment 8. Compared to the City's request, application of Final Subpart Da limits of (70 percent sulfur dioxide potential concentration reduction when emissions are less than 0.6 lb/mmBtu) costs an additional \$1,900,000 on an annualized basis. The present requirement of 85 percent scrubber efficiency costs \$2,800,000 (\$4,850,000 with a new scrubber module) more than the City's proposal on an annualized basis. These represent incremental costs of between \$1,000 and \$2000 per ton of SO₂ removed (roughly \$3000-4000 per ton of SO₂ if a new module is purchased).

The energy impacts are included within in the cost analysis and represent the additional energy required to operate the scrubber and well as the energy penalty due to stack re-heat when it is not possible to use bypassed flue gas. The increases over the City's proposal are 16,400 MW-hr/yr and 21,100 MW-hr/yr for the Final Subpart Da limits the existing PSD Permit respectively.

The other main impact relates to the amount of scrubber sludge generated. Compared to the City's request, the Final Subpart Da option generates 5 percent more sludge while the present PSD Permit requirements result in 15 percent more sludge. Water consumption is also greater by roughly 53 percent for both the Final Subpart Da scenario the current PSD Permit requirements.

The Department's proposal lies roughly mid-way between the City's proposal and the Final Subpart Da limits. It is achievable using existing equipment and appears to be cost effective.

H. Other Issues

The City has pointed out that Unit 3 has only two modules, each of which can process only 55 percent of the flue gas and that Subpart Da units typically have at least one spare module. The City contends that they cannot meet the Final Subpart Da limits or the 85 percent efficiency requirement in the PSD Permit as soon as a single module malfunctions. This is correct. However extra modules are required for emergency purposes only for Da units of

365 MW while Unit 3 is a non-Da 364 MW unit. Emergency conditions were already addressed in the PSD Permit which allows burning of oil and refuse without use of the scrubber as long as SO₂ emissions do not exceed 0.8 lb/mmBtu. Furthermore the Department's proposal will give the City much flexibility than it now has to continue operating Unit 3 during a partial malfunction without having to implement emergency operation modes.

The City contends that EPA permitted FPC Crystal River Units 4 and 5 about the same time as Unit 3, yet allowed them to use specification coal with no scrubbing and to comply only with the requirements of Subpart D. Apparently EPA issued Lakeland's permit on December 27, 1978 in accordance with the PSD regulations (requiring case-by-case BACT determination) proposed on November 3, 1977 and promulgated on June 19, 1978. EPA issued FPC's permit on February 27, 1978 in accordance with the previous regulations. EPA applied the newer PSD rules to permits issued after March 1, 1978 which was the originally scheduled date for final rule promulgation. Moreover, low sulfur coal was proposed by FPC and accepted by EPA (together with PSD-based SO₂ reductions at its existing Units 1 and 2).

The City provided information to the Department that the Louisa Generating Station Unit 3 in Illinois received a much less stringent BACT determination under identical permitting circumstances (non-Subpart Da unit but subject to case-by-case BACT pursuant to the 1977 CAAA's). The Louisa Unit 3 was the case-in-point of the EPA November, 1978 memo discussed above which directed regions to presume the 85 percent scrubbing efficiency requirement of the then-proposed Subpart Da. The applicant proposed a low sulfur coal strategy which was approved. The applicant received an SO₂ emission limit of 0.96 lb/mmBtu (30-day basis) in the permit issued in August, 1979. The Department considered the information provided by the City in developing its proposed action which is less stringent than the Final Subpart Da but more stringent than the BACT determination made for the Louisa Plant.

The City proposed to comply with an emissions limit of 0.90 lb/mmBtu on a 30 day rolling basis. There appears to be no actual benefit to the City or improvement to air quality since both the present and proposed SO₂ reduction requirements will insure that a value much less than 0.90 lb/mmBtu is achieved unless the City switches to a very high sulfur fuel program. There may be a benefit related to SO₂ increment consumption and the Department will accept the new value if the City wishes to have it imposed on its operations.