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CLERK'S OFFICE

JAN 03 2005

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD  
OF THE STATE OF ILLINOIS

STATE OF ILLINOIS  
Pollution Control Board

SOUTHERN ILLINOIS POWER COOPERATIVE )  
Low Sulfur Dioxide Emission Coal Fueled Device )  
)  
)  
)  
PROPERTY IDENTIFICATION NUMBER )  
10-26-200-002 )

05-119  
PCB 04  
(Tax Certification)

NOTICE

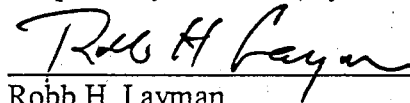
TO: Dorothy Gunn, Clerk  
Illinois Pollution Control Board  
State of Illinois Center  
100 W. Randolph Street, Suite 11-500  
Chicago, Illinois 60601

Richard C. Myott  
Southern Illinois Power Coop  
11543 Lake of Egypt Road  
Marion, Illinois 62959-8500

Steve Santarelli  
Illinois Department of Revenue  
101 West Jefferson  
P.O. Box 19033  
Springfield, Illinois 62794

PLEASE TAKE NOTICE that I have today filed with the Office of the Pollution Control Board the APPEARANCE and RECOMMENDATION of the Illinois Environmental Protection Agency, a copy of which is herewith served upon the applicant and a representative of the Illinois Department of Revenue.

Respectfully submitted by,



Robb H. Layman  
Special Assistant Attorney General

Date: December 29, 2004

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, IL 62794-9276  
Telephone: 217/782-5544  
Facsimile: 217/782-9807

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PROPERTY IDENTIFICATION NUMBER )  
10-26-200-002 )

05-119  
PCB-~~0~~  
(Tax Certification)

APPEARANCE

I hereby file my Appearance in this proceeding on behalf of the Illinois  
Environmental Protection Agency.

Respectfully submitted by,



Robb H. Layman  
Special Assistant Attorney General

Date: December 29, 2004

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Low Sulfur Dioxide Emission Coal Fueled Device )  
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05-119

RECOMMENDATION

NOW COMES the ILLINOIS ENVIRONMENTAL PROTECTION AGENCY ("Illinois EPA"), through its attorneys, and pursuant to 35 Ill. Adm. Code 125.204 of the ILLINOIS POLLUTION CONTROL BOARD'S ("Board") procedural regulations, files the Illinois EPA's Recommendation in the above-referenced request for tax certification of pollution control facilities. In support thereof, the Illinois EPA states as follows:

1. On September 30, 2004, the Illinois EPA received a request and supporting information from SOUTHERN ILLINOIS POWER COOPERATIVE ("SIPC") concerning the proposed tax certification of certain air emission sources and/or equipment located at its power plant in Williamson County, Illinois. A copy of the relevant portions of the application is attached hereto. [Exhibit A]. The Illinois EPA also received a letter on October 25, 2004, from SIPC containing supplemental information for the application. [Exhibit B].

2. The applicant's address is as follows:

Southern Illinois Power Cooperative  
11543 Lake of Egypt Road  
Marion, Illinois 62959-8500

3. The subject matter of this request consists of the recognition of a new circulating fluidized bed ("CFB") boiler as a "low sulfur dioxide emission coal fueled device" as defined by statute. The CFB boiler does not require downstream flue gas desulfurization because the sulfur dioxide is captured by limestone that is utilized as part of the fluidized bed. The equipment may therefore be considered a low sulfur dioxide emission device as the CFB boiler will be used to convert locally available coal in a manner that eliminates the need for any additional sulfur abatement measures otherwise required under state or federal laws and regulations.

4. Section 11-40 of the Property Tax Code, 35 ILCS 200/11-40 (2002), defines "low sulfur dioxide emission coal fueled devices" as:

"any device used or intended for the purpose of burning, combusting or converting locally available coal in a manner which eliminates or significantly reduces the need for additional sulfur abatement that would otherwise be required under State or Federal air emission standards."

The word "device" is also defined in the same provision to include:

"all machinery, equipment, structures and all related apparatus, including coal feeding equipment, of a coal gasification facility designed to convert locally available coal into a low sulfur gaseous fuel and to manage all waste and by-product streams."

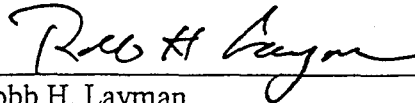
5. As with pollution control facilities, low sulfur dioxide emission coal fueled devices are entitled to preferential tax treatment, as provided by 35 ILCS 200/11-35 (2002).

6. Based on information in the application, it is the Illinois EPA's engineering judgment that the described project and/or equipment may be considered a "low sulfur dioxide emission coal fueled device" in accordance with the statutory definition and consistent with the Board's regulations at 35 Ill. Adm. Code 125.200.

7. Because the CFB boiler identified in SIPC's application satisfies the  
aforementioned criteria, the Illinois EPA recommends that the Board issue the applicant's  
requested tax certification.

Respectfully submitted by,

ILLINOIS ENVIRONMENTAL PROTECTION  
AGENCY



---

Robb H. Layman  
Special Assistant Attorney General

DATED: December 29, 2004

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, Illinois 62794-9276  
Telephone: 217/782-5544  
Facsimile: 217/782-9807

THIS FILING IS SUBMITTED ON RECYCLED PAPER

CERTIFICATE OF SERVICE

I hereby certify that on the 29<sup>th</sup> day of December, 2004, I did send, by First Class Mail, with postage thereon fully paid and deposited into the possession of the United States Postal Service, one (1) original and nine (9) copies of the following instruments entitled **NOTICE, APPEARANCE** and **RECOMMENDATION** to:

Dorothy Gunn, Clerk  
Illinois Pollution Control Board  
100 West Randolph Street  
Suite 11-500  
Chicago, Illinois 60601

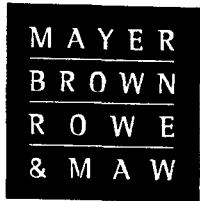
and a true and correct copy of the same foregoing instruments, by First Class Mail with postage thereon fully paid and deposited into the possession of the United States Postal Service, to:

Steve Santarelli  
Illinois Department of Revenue  
101 West Jefferson  
P.O. Box 19033  
Springfield, Illinois 62794

Richard C. Myott  
Southern Illinois Power Coop  
11543 Lake of Egypt Road  
Marion, Illinois 62959-8500

  
By: Robb H. Layman  
Special Assistant Attorney General

This filing is submitted on recycled paper.



September 29, 2004

Mayer, Brown, Rowe & Maw LLP  
190 South La Salle Street  
Chicago, Illinois 60603-3441

**VIA UPS**

Main Tel (312) 782-0600  
Main Fax (312) 701-7711  
www.mayerbrownrowe.com

Mr. Donald E. Sutton, P.E.  
Permit Manager/Permit Section  
Division of Air Pollution Control  
Illinois Environmental Protection Agency  
1021 North Grand Avenue East  
Springfield, IL 62702

**Patrick J. McNerney**  
Direct Tel (312) 701-7609  
Direct Fax (312) 706-8747  
pmcnerney@mayerbrownrowe.com

Re: Southern Illinois Power Cooperative  
Application for Certification of Circulating  
Fluidized Bed Boiler

Dear Mr. Sutton:

Enclosed please find Southern Illinois Power Cooperative's Application for certification of its newly installed Circulating Fluidized Bed Boiler. Please cause your staff to review the enclosed Application and call me if you need any additional documentation.

Thank you.

Very truly yours,

  
Patrick J. McNerney

PJM:mg

Enclosures

cc: Ms. Angela L. Desmond

**RECEIVED**

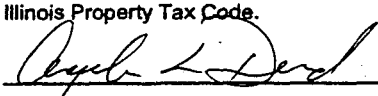
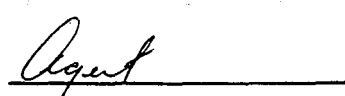
SEP 30 2004

IEPA - DAPC - SPFLD

— *Exhibit A* —





Sec. E	(1) Nature of Contaminants or Pollutants				
POLLUTION CONTROL FACILITY - CONTAMINANTS  ACCOUNTING DATA			Material Retained, Captured or Recovered		
	Contaminant or Pollutant	DESCRIPTION	DISPOSAL OR USE		
	See copy of May 16, 2001IEPA construction permit for CFB attached hereto as Exhibit D				
	(2) Point(s) of Waste Water Discharge				
			Plans and Specifications Attached	Yes	No
	(3)	Are contaminants (or residues) collected by the control facility?		Yes	No
	(4)	Date installation completed <u>12/2003</u> status of installation on date of application <u>Completed</u>			
	(5)	a. FAIR CASH VALUE IF CONSIDERED REAL PROPERTY:	\$ 110,000,000 <sup>1/</sup>		
	b. NET SALVAGE VALUE IF CONSIDERED REAL PROPERTY:	\$ 0			
	c. PRODUCTIVE GROSS ANNUAL INCOME OF CONTROL FACILITY:	\$			
	d. PRODUCTIVE NET ANNUAL INCOME OF CONTROL FACILITY:	\$			
	e. PERCENTAGE CONTROL FACILITY BEARS TO WHOLE FACILITY VALUE:	% 75%			
Sec. F	The following information is submitted in accordance with the Illinois Property Tax Code, as amended, and to the best of my knowledge, is true and correct. The facilities claimed herein are "pollution control facilities" as defined in Section 11-10 of the Illinois Property Tax Code.				
SIGNATURE					
	Signature		Title		
Sec. G	INSTRUCTIONS FOR COMPILING AND FILING APPLICATION				
	General: Separate applications must be completed for each control facility claimed. Do not mix types (water and air). Where both air and water operations are related, file two applications. If attachments are needed, record them consecutively on an index sheet.				
INSTRUCTIONS	Sec. A	Information refers to applicant as listed in the tax records and the person to be contacted for further details or for inspection of facilities. Define facility location by street address or legal description. A plat map location is required for facilities located outside of municipal boundaries. The property identification number is required.			
	Sec. B	Self-explanatory. Submit copies of all permits issued by local pollution control agencies. (e.g. MSD Construction Permit)			
	Sec. C	Refers to manufacturing processes or materials on which pollution control facility is used.			
	Sec. D	Narrative description of the pollution control facility, indicating that its primary purpose is to eliminate, prevent or reduce pollution. State the type of control facility. State permit number, date, and agency issuing permit. A narrative description and a process flow diagram describing the pollution control facility. Include a listing of each major piece of equipment included in the claimed fair cash value for real property. Include an average analysis of the influent and effluent of the control facility stating the collection efficiency.			
	Sec. E	List air contaminants, or water pollution substances released as effluents to the manufacturing processes. List also the final disposal of any contaminants removed from the manufacturing processes. Item (1) - Refers to pollutants and contaminants removed from the process by the pollution control facility. Item (2) - Refers to water pollution but can apply to water-carried wastes from air pollution control facilities. Submit drawings, which clearly show (a) Point(s) of discharge to receiving stream, and (b) Sewers and process piping to and from the control facility. Item (3) - If the collected contaminants are disposed of other than as wastes, state the disposition of the materials, and the value in dollars reclaimed by sale or reuse of the collected substances. State the cost of reclamation and related expense. Item (4) - State the date which the pollution control facility was first placed in service and operated. If not, explain. Item (5) - This information is essential to the certification and assessment actions. This accounting data must be completed to activate project review prior to certification by this Agency.			
	Sec. F	Self-explanatory. Signature must be a corporate authorized signature.			
		Submit to:	Attention:	Attention:	
		Illinois EPA P.O. Box 19276 Springfield, IL 62794-9276	Thomas McSwiggin Permit Section Division of Water Pollution Control	Donald E. Sutton Permit Section Division of Air Pollution Control	

1/ Completion of this section is not an acknowledgement that this property constitutes real property for ad valorem property tax purposes.

## **Section D - Describe Pollution Abatement Control Facility**

The principle of the circulating fluidized bed system can be explained by examining the relationship between differential pressure and superficial gas velocity for a bed of particles. For a fixed bed, the log of differential pressure is approximately proportional to the log of gas velocity. As the gas velocity increases beyond the minimum fluidization velocity, the particles begin to expand and become fluidized, and a distinct bed level is visible in the fluid bed. The differential pressure remains almost constant until the bed material begins to elutriate (lift and separate) at the entrainment velocity of a bubbling bed. The degree of turbulent mixing continues to increase between the minimum and the entrainment velocity. Beyond the entrainment velocity, the particles are carried out of the combustor, and a continuous process is maintained by circulating the same amount of particles to the bottom of the reactor. The entrainment velocity marks the transition from a bubbling bed to a circulating bed. Beyond this velocity, the differential pressure becomes a function of velocity and solid recirculating rate. The CFB system operates in the region between that of a bubbling fluidized bed and that of a circulating fluidized bed until normal bed temperatures are obtained, air flow is above minimum, and the entrainment velocity is reached. From that point the unit operates as a circulating fluidized bed. This fluidization pattern is characterized by high turbulence, solids back-mixing, and the absence of a defined bed level. The entrained bed material, with an average size in the range of 100 to 300 microns, (talcum powder) is separated by a cyclone and returned to the bed via a non-mechanical loop seal. Fuel is fed into the lower combustion chamber, and primary air is introduced through a lower grid. Because of the turbulence in the circulating bed, the fuel mixes quickly and uniformly with the bed material. Although there is no definite fixed bed depth, the density of the bed varies throughout the system, with the highest density at the level where the fuel is introduced.

Secondary air is introduced to:

- Ensure solids circulation;
- Provide staged combustion for NO<sub>x</sub> reduction.
- Supply air for continuous fines combustion in the upper part of the combustion chamber.

The major advantages of the CFB combustion system can be summarized as follows:

### **Fuel flexibility**

The CFB can be designed to fire a wide range of fuels including high ash and moisture coals, biomass, and low volatile petroleum cokes.

### **Low sulfur emissions**

Downstream flue gas desulfurization is not required to meet environmental regulations. Sulfur is captured by limestone in the combustion chamber.

### **High combustion efficiency**

Excellent vertical and lateral mixing and a long solids residence time resulting from high gas solids slip velocity ensures optimum carbon burnout.

### **Low NOx emissions**

Low combustion temperature and staged combustion result in low NOx emissions which meet most regulatory standards without downstream treating.

### **Elimination of slagging**

Low combustion temperature eliminates slag formation and reduces the volatilization of alkali salts. This reduces boiler corrosion and convective surface fouling.

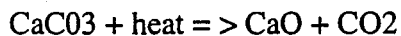
### **High turndown**

The high velocities in the combustion chamber permit large load reductions without bed slumping.

The major components of the CFB boiler system are the combustion chamber, hot cyclone separator, the non-mechanical loop seal, INTREX and the convection superheater surface. In the combustion chamber the bed material, with the fuel, is fluidized with primary air which turbulently transports the solids up the full height of the combustion chamber. Combustion of the fuel takes place as it rises and heat is transferred to the membrane water-wall tubing that forms the walls of the combustion chamber. The hot combustion gases with the entrained solids exit at the top of the combustion chamber into the cyclone separator. The cyclone separator separates the solids from the combustion gases and returns the solids, including any unburned solid fuel, through the non-mechanical loop seal to the INTREX where solids heat is transferred to superheaters and combustion chamber where they mix with incoming fresh fuel. The long solids residence time at combustion temperature and the retention and continuous recirculation of the solids ensure high combustion efficiencies for a wide range of fuels and result in an ideal system for the mixture of fine limestone with the fuel for efficient SO<sub>2</sub> retention in solid ash form.

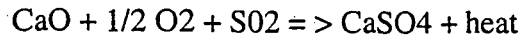
The limestone reacts with the sulfur released from the fuel in the following steps:

- a. Calcination of limestone



Note: The released CO<sub>2</sub> does have a minor affect on the quantity of flue gas.

b. Reaction with sulfur (sulfation)



The product, CaSO<sub>4</sub> is an inert substance known as gypsum.

The limestone is continuously reacted and, therefore, it is necessary to continuously feed limestone with the fuel. The sulfation reaction requires that there is always an excess amount of limestone present. The amount of excess limestone that is required is dependent on a number of factors such as the amount of sulfur in the fuel, the temperature of the bed, and the physical and chemical characteristics of the limestone. The ideal reaction temperature range is 845 - 900°C. The lower section of the combustion chamber includes a water cooled air distribution grid and windbox as well as a bottom ash removal system. Provisions are made for primary and secondary air supply to the combustion chamber. The primary air is supplied through the water cooled windbox to the fluidizing grid and provides the initial fluidization air flow. The secondary air provides a staged combustion effect to ensure high combustion efficiencies and to minimize NO<sub>x</sub> production. Flue gas and some fine size particulate-matter leave the hot cyclone separator and pass through the convection section which contains superheat, reheat and economizer banks, plus an air preheater. The flue gas then enters a particle collector where particulate matter is removed in compliance with environmental regulations. Clean flue gas is discharged to the stack via the induced draft fan.

Feedwater enters the economizer and counterflows against the flue gas, picking up heat before entering the drum. Water flows from the drum to the lower combustion chamber headers via downcomers and supply pipes. The combustion chamber is arranged for natural circulation. As the steam/water mixture in the waterwalls absorbs heat from the combustion flue gases it rises up the water wall tubes, is collected in the upper combustor headers and is transferred to the drum via rise tubes. The density difference between the water and the steam/water mixture creates a natural pumping action. The steam/water mixture is separated in the drum. Dry, saturated steam leaves the top of the drum and is delivered to the superheat surfaces. The superheater bundles are arranged in multiple stages, SH I, SH II (in INTREX )and SH III (in INTREX),with attemperation between each stage. The superheated steam exits the outlet header of the final superheater and enters the main steam line.

## ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

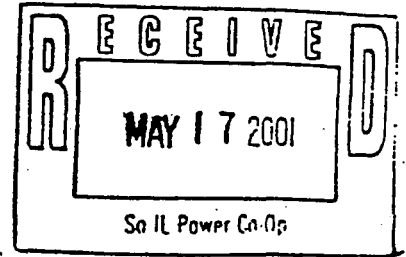
P.O. Box 19506, Springfield, Illinois 62794-9506

THOMAS V. SKINNER, DIRECTOR

## CONSTRUCTION PERMIT - PSD - NSPS

PERMITTEE

Southern Illinois Power Cooperative  
 Attn: Mr. Richard G. Myott  
 11543 Lake of Egypt Road  
 Marion, Illinois 62959-8500

Application No.: 00070030I.D. No.: 199856AACApplicant's Designation: CFB BOILERDate Received: July 12, 2000Subject: Circulating Fluidized Bed Boiler (Power Production)Date Issued: May 16, 2001Location: 11543 Lake of Egypt Road, Marion

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission units and air pollution control equipment in conjunction with a repowering project described in the above referenced permit application, including one circulating fluidized bed (CFB) boiler capable of burning coal refuse, coal, petroleum coke, tire derived fuel, wood chips, and fuel oil; solid fuel storage piles and silos and reclaiming and conveying equipment; limestone storage pile and silo and reclaiming and conveying equipment; ash storage silos; and associated air pollution control equipment and other support equipment. This Permit is granted based upon and subject to the findings and conditions that follow:

In conjunction with this permit, approval is given with respect to the Prevention of Significant Deterioration (PSD) Air Quality Regulations to construct the above referenced project, in that the Illinois Environmental Protection Agency (Illinois EPA) finds that the application fulfills all applicable requirements of 40 CFR 52.21. This approval is issued pursuant to the Clean Air Act, as amended, 42 U.S.C. 7401 et. seq., the Federal regulations promulgated thereunder at 40 CFR 52.21, and a Delegation of Authority agreement between the United States Environmental Protection Agency (USEPA) and the Illinois EPA for the administration of the PSD Program. This approval becomes effective in accordance with the provisions of 40 CFR 124.15 and may be appealed in accordance with the provisions of 40 CFR 124.19. This approval is also based upon and subject to the following findings and conditions.

FINDINGS

- 1a. Southern Illinois Power Cooperative (SIPC) is presently comprised of four solid fuel fired coal fired generating units and has requested a permit to construct a new solid fuel fired boiler to replace existing coal fired Units 1-3. Units 1-3 are each rated at 33 MW. The boiler would be designed to use coal refuse, which is a low Btu, high ash fuel, as its main fuel. The new boiler will produce enough steam to serve the three existing steam turbines with a total nominal generating capacity of 120 MW (gross).
- b. The proposed new boiler will be a circulating fluidized bed (CFB) boiler with limestone injection in the combustor, ammonia injection as necessary in the cyclone section of the boiler, and a baghouse for particulate emission control. Associated emission units include fuel handling systems for coal refuse, coal, petroleum coke, wood chips and tire derived fuel; new limestone storage silo and conveying equipment; two ash storage silos and other ancillary equipment.

- c.
      - i. Concurrent with the boiler project, SIPC is proposing to construct two simple cycle combustion turbines (CTs). SIPC is also proposing to install a selective catalytic reduction system on Unit 4, an existing coal-fired boiler at the Marion Generating Station rated at 173 MW.
      - ii. Separate permit applications have been submitted for the simple cycle combustion turbines and the selective catalytic reduction system for Unit 4. However, for air quality purposes they can be considered a single project.
  2. The CFB boiler project will be located at SIPC's existing Marion Generating Station located in Williamson County. The area is designated attainment for all criteria air pollutants. The county has a Class II designation for Prevention of Significant Deterioration (PSD) permit review.
  - 3a. The existing plant is a major source under PSD rules. The proposed CFB boiler will have potential annual emissions of 3690 tons/year of sulfur dioxide (SO<sub>2</sub>), 841 tons/yr of nitrogen oxides (NO<sub>x</sub>), 67.5 tons/yr of particulate matter (PM), 921 tons/yr of carbon monoxide (CO), and 44.2 tons/yr of volatile organic materials (VOM).
  - b. SIPC has submitted a PSD netting demonstration that addresses the decrease in emissions from shutdown of existing boilers that occurs with this repowering project. The netting demonstration, summarized in Attachment B, shows that the proposed repowering project will result in a significant net increase in emissions for one regulated PSD pollutant, carbon monoxide (CO). All other regulated PSD pollutants will experience either a net decrease or an insignificant net increase in annual emissions. Therefore, the CFB boiler is subject to PSD review for CO and only provisions of this permit that relate to emissions of CO are considered part of the PSD approval.
  4. The air quality analysis submitted by SIPC and reviewed by the Illinois EPA shows that the proposed repowering project will not cause a violation of the ambient air quality standard for CO. The air quality analysis demonstrated compliance with the allowable increment levels for CO established under the PSD regulations.
  5. After reviewing the materials submitted by SIPC, the Illinois EPA has determined that the proposed CFB boiler will (i) comply with applicable state air emission standards, (ii) comply with applicable federal New Source Performance Standards, 40 CFR 60, Subpart Da (iii) comply with all applicable Illinois Air Pollution Board Regulations and (iv) utilize Best Available Control Technology (BACT) on emissions of CO as required by regulations, 40 CFR 52.21(Conditions 3 and 7 as applied to emissions of CO represent the application of BACT for CO, as required by Section 165 of the Clean Air Act.), and (v) utilize BACT on emission associated with burning of tires as required by section 55(h) of the Environmental Protection Act. (Conditions 2, 3 and 7 represent the application of BACT)
  6. The CFB boiler is an affected unit under the Acid Rain Deposition Control Program pursuant to Title IV of the Clean Air Act and is subject to certain control requirements and emission monitoring requirements pursuant to 40 CFR Parts 72, 73, and 75. As an affected unit under the Acid Rain Program, an Acid Rain Permit application must be submitted in accordance with the applicable requirements of 40 CFR 72.30 before commencing operation and must hold calendar year allowances for each ton of SO<sub>2</sub> emitted.

- 7a. This permit is issued based on the proposed CFB boiler not being a major new source of hazardous air pollutants for purposes of Section 112(g) of the Clean Air Act. This reflects a finding that the CFB boiler should reduce emissions of hazardous air pollutants from the Marion Generating Station, as it generally reduces emissions of air pollutants (refer to Attachment B, Table 1). In addition, the application indicates that the emission of hazardous air pollutants from the boiler itself would be below the criteria for a major source hazardous air pollutants.
- b. The new fuel handling systems to be installed for the CFB boiler do not involve breaking, crushing, screening, cleaning, or thermal drying of coal. To the extent that any such operations are required, they will be accomplished by existing equipment. Therefore, the new fuel handling systems are not subject to the New Source Performance Standards for Coal Preparation Plants, 40 CFR 60, Subpart Y.
- 8a. A copy of the air permit application, the project summary and a draft of this permit were placed in a location in the vicinity of the proposed project site. The public has been given notice and an opportunity to examine this material and to submit comments. A public hearing was held in the vicinity of Marion Generating Station to allow public comment on this matter.
- b. This permit is issued following consideration by the Illinois EPA of all public comments submitted by April 28, 2001. This is the date for close of the comment period established by order of the Hearing Officer, following consideration of an oral request by the Permittee at the public hearing, which was unopposed to shorten the period following the hearing for submittal of written comments. As such, this permit authorizes the Permittee to undertake construction of the proposed facility. However, the Illinois EPA is retaining jurisdiction over the application and will take further action on the application after consideration of public comments, if any, submitted within the public comment period originally established for the project, i.e., May 18, 2001. As necessary to allow the Illinois EPA to consider and take action upon any such further public comments, the issuance of this permit shall not be considered a final action by the Illinois EPA.

The Illinois EPA is issuing approval to construct the proposed repowering project subject to the following Special Conditions and consistent with the materials included in the air permit application. Any departure from the conditions of this permit approval or intent of the terms expressed in the air permit application would need to receive prior written authorization by the Illinois EPA.

#### SPECIAL CONDITIONS

1. Standard Conditions for issuance of construction permits, attached hereto and incorporated herein by reference, shall apply to this project, unless superseded by the following Special Conditions.
- 2a.
  - i. The CFB boiler is subject to a New Source Performance Standard (NSPS) for Electric Utility Steam Generating Units, 40 CFR 60, Subparts A, and Da. The Illinois EPA is administering NSPS in Illinois on behalf of the USEPA under a delegation agreement.
  - ii. The emissions from CFB boiler shall not exceed the applicable limits pursuant to the NSPS, as follows:

- A. The NO<sub>x</sub> emissions from the CFB boiler system shall not exceed 1.6 lb/MW-hr gross energy output, based on a 30-day rolling average, pursuant to 40 CFR 60.44a(d). The SNCR system shall be operated and maintained to the extent necessary to ensure compliance with the applicable NSPS and achieve the emission limitations contained in Attachment A.
  - B. The SO<sub>2</sub> emissions from the CFB boiler system shall comply with the requirements of 40 CFR 60.43a(a). Compliance with the SO<sub>2</sub> emission limitation and percent reduction requirement shall be determined on a 30-day rolling average basis.
  - C. The PM emissions from the CFB boiler system shall not exceed 0.03 lb/mmBtu heat input and 1 percent of potential combustion concentration when combusting solid fuel, and 30 percent of the potential combustion concentration when combusting liquid fuel pursuant to 40 CFR 60.42a(a). Compliance with the PM emission limitation constitutes compliance with the percent reduction requirements.
  - D. Pursuant to 40 CFR 60.46a(c), the emission limitations established above shall apply at all times, except during periods of startup, shutdown or malfunction as defined by 40 CFR 60.2.
- b. i. The limestone handling and storage processes are subject to the NSPS for Nonmetallic Mineral Processing Plants, 40 CFR 60, Subparts A and 000.
- ii. A. Stack Emissions of particulate matter from affected limestone handling and storage processes shall not exceed 0.022 gr/dscf and shall not exhibit greater than 7 percent opacity (unless controlled by a wet scrubber) 40 CFR 60.272(a).
- B. Fugitive emissions of particulate matter from limestone grinding mills, screens (except truck dumping), storage bins, enclosed truck or railcar loading operations and crushers at which a capture system is used shall not exceed 10% opacity. (40 CFR 60.672(b) and (d))
- C. Fugitive emissions of particulate matter from the crushers, at which a capture system is not used, shall not exceed 15% opacity. (40 CFR 60.672(c))
- D. Truck dumping of limestone into any screening operation, feed hopper, or crusher is exempt from the requirements of 40 CFR, Subpart 000. (40 CFR 60.672(d))
- c. At all times, the Permittee shall maintain and operate emission units that are subject to the NSPS, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions, as required per NSPS, 40 CFR 60.11(d).
- 3a. The Permittee shall use good combustion practices to minimize CO emissions from the CFB boiler.



- b. i. The CO emissions from the CFB boiler shall not exceed the following limit except during startup, malfunction or breakdown and shutdown as addressed by Condition 7.  
  
0.15 lb/million Btu, based on a 3-hour block average
- ii. The Permittee shall evaluate CO emissions from the CFB boiler to determine whether a lower CO emission limit (as low as 0.10) may be reliably achieved while complying with other emission limits without significant risk to equipment or personnel and unreasonable increase in maintenance and repair needed for the boiler.
- 4a. The fuel storage silos, limestone storage silo and ash storage silos shall each be equipped with a baghouse (fabric filter) to control PM emissions. The baghouses shall be operated and maintained so as to ensure compliance with the PM emission limitations indicated in the application.
- b. The Permittee shall employ good operating practices for the operation of the active fuel and limestone storage piles as to minimize the emission of PM from the storage piles.
- 5. The Permittee shall comply with the following requirements with respect to opacity and visible emissions.
  - a. The emission of smoke or other particulate matter from the CFB boiler shall not have an opacity greater than 20 percent, pursuant to 35 IAC 212.122(a), except as allowed by 35 IAC 201.149, 212.122(b) or 212.124. Opacity measurements taken to demonstrate compliance with these provisions shall be based on a 6-minute average.
  - b. The emission of smoke or other particulate matter from baghouses associated with the fuel storage, limestone storage and ash storage silos shall not have an opacity greater than 30 percent, pursuant to 35 IAC 212.123(a), except as allowed by 35 IAC 201.149, 212.123(b) or 212.124. Opacity measurements taken to demonstrate compliance with these provisions shall be based on a 6-minute average.
  - c. Visible emission of particulate matter associated with fuel storage pile, the limestone storage pile, and the associated material handling operations shall comply with the provisions of 35 IAC 212.301.
- 6a. i. Emissions from the CFB boiler shall not exceed the limits in Attachment A, Table 2, except during startup, malfunction or shutdown as addressed by Condition 7. Compliance with the limits ensures that emissions from the CFB boiler project are within the overall project totals shown in Attachment B. The total increase in emissions in Attachment B will ensure that the CFB boiler and associated projects do not constitute a major modification pursuant to PSD for any pollutant except CO. Compliance with these hourly limits shall be determined as a 3-hour block average for all pollutants consistent with testing and monitoring as required by Conditions 12 and 14.

- ii. Annual emissions from the CFB boiler shall not exceed the limits in attachment A, Table 2. Compliance with the annual limits shall be determined from a running total of 12 months of emission and fuel consumption data.
  - b. PM emissions from the operation of the fuel silos, limestone silo and ash silos shall not exceed the limits of 0.137 lb/hour each for silos S1 through S5, and 0.645 lb/hour each for silos S6 and S7, as indicated in the application.
7. The CFB boiler and air pollution control equipment shall be operated to minimize emissions during startup, malfunction and shutdown including:
- a.
    - i. Operation in accordance with the manufacturer's written instructions, or other written instructions developed and maintained by the Permittee; and
    - ii. Review of operating parameters of the units during startup, malfunction, breakdown or shutdown as necessary to make adjustments to reduce or eliminate excess emissions.
  - b. The Permittee shall maintain the CFB boiler and air pollution control equipment in accordance with written procedures developed and maintained by the Permittee. These procedures shall be reviewed at least annually and enhanced consistent with good air pollution control practice based on actual operating experience and performance.
  - c. Upon malfunction of the CFB boiler or any air pollution control equipment that will result in emissions in excess of the applicable limits in Condition 6, the Permittee shall, as soon as practicable, repair the affected system or remove the system from service so that excess emissions cease.
  - d. Consistent with the above, if the Permittee has maintained and operated the CFB boiler and air pollution control equipment so that malfunctions are infrequent, sudden, not caused by poor maintenance or careless operation, and in general are not reasonably preventable, the Permittee shall begin shutdown of the system within 90 minutes, unless the malfunction is expected to be repaired within 120 minutes or such shutdown could threaten the stability of the regional electrical power system. In such case, shutdown of the system shall be undertaken when it is apparent that repair will not be accomplished within 120 minutes or shutdown will not endanger the regional power system. In no case shall shutdown of the CFB boiler be delayed solely for the economic benefit of the Permittee.
  - e. Notwithstanding the above, if the Permittee determines that the continuous emission monitoring system (CEMS) is inaccurately reporting excess emissions, the Permittee may continue operation provided the Permittee records the information it is relying upon to conclude that the CFB boiler and emission control systems are functioning properly and the CEMS is reporting inaccurate data and the Permittee takes prompt action to resolve the accuracy of the CEMS.

- 8a. The fuel feed stream combusted into the CFB boiler shall contain no more than 20 percent by weight, on a calendar quarter basis, of tires, tire derived fuel, and other materials which constitute municipal solid waste as defined in 40 CFR 60.51a.
- b. The Permittee shall keep records on a calendar quarter basis of the weight of tires, tire derived fuel and other material which constitute municipal solid waste combusted in each CFB boiler and the weight of all other materials, by type, burned in each CFB boiler.
- c. As a consequence of the above conditions, this permit is issued based on the CFB boiler constituting a co-fired boiler pursuant to 40 CFR 60.50b(g) provided the Permittee notifies the USEPA of this status accompanied by a copy of this permit, with a copy of such notification also sent to the Illinois EPA.
- 9a. This permit allows use of tires and tire derived fuel, as defined in Section 54 of the Act, and clean wood, as defined in 40 CFR 60.51b, as supplemental fuels in the CFB boilers.
- b. Supplemental fuels shall be burned in a blend with commercial fuels (coal refuse, coal, petroleum coke, etc.) so as to not exceed 20 percent by weight in the total fuel supply to the CFB boiler, determined on a daily basis.
- c. The Permittee shall handle supplemental fuels for the CFB boiler in accordance with a written fuel management plan designed to assure that acceptable fuel is received and fuel is safely stored and handled. This plan shall include the specifications for acceptable fuel, anticipated sources of fuel, procedures for qualifying fuel suppliers, procedures for inspection of fuel shipments, procedures for rejection of unacceptable shipments, and procedures for on-site handling and storage of fuel.
- d. The Permittee shall burn supplemental fuels in the CFB boiler in accordance with written operating procedures designed to assure a uniform and consistent blend of fuel to the boilers and operation of the boilers in compliance with applicable requirements of this permit. This plan shall include the design and maximum amount of the fuel in the total blend, procedures for blending fuels, changes to normal operating procedures for the boiler, if any, and acceptable ranges for boiler and air pollution control equipment operating parameters, if different than normal.
- e. The Permittee shall keep appropriate records to demonstrate that it is complying with the above requirements.
- f.
  - i. The Permittee shall promptly submit monthly progress reports to the Illinois EPA while it is initially introducing a supplemental fuel into a CFB boiler. This report shall include the firing rate(s) being evaluated, a description of the events and findings during the month, and a summary of CEM's emission data.
  - ii. At the conclusion of the introduction of a supplemental fuel, the Permittee shall promptly submit a final report to the Illinois EPA stating the maximum rate at which the fuel will be burned and providing a summary of the written fuel management plan and operating procedures prepared for use of the fuel and the range of emission rates expected from operation with such fuel.

- g. Nothing in this condition shall excuse the Permittee from compliance with applicable statutes and rules governing supplemental fuels, including rules governing storage of tires.
- 10a. The Permittee shall not burn wastes that are generated by another person's activities, other than tires and tire derived fuel in the boiler, without first having obtained local approval pursuant to Section 39.2 of the Act, if required, and appropriate permits from the Illinois EPA.
- b. For purposes of this condition, a clean wood material may be considered a waste if it is a discarded material.

This condition is imposed to address compliance with State requirements under Section 39.2 of the Act.

- 11a. Under this permit, the CFB boiler and associated equipment may be operated for a period that ends 180 days after the CFB boiler first generates electricity to allow for equipment shakedown and emissions testing as required. This period may be extended by Illinois EPA upon request of the Permittee if additional time is needed to complete shakedown or perform emission testing of the CFB boiler.
  - b. Upon successful completion of emission testing of the CFB boiler demonstrating compliance with applicable limitations, the Permittee may continue to operate the facility as allowed by Section 39.5(5) of the Environmental Protection Act.
  - c. This condition supersedes Standard Condition 6.
- 12a i. Within 60 days after operating the CFB boiler at the greatest load at which it will normally be operated, but not later than 180 days after its initial startup, the Permittee shall have emissions tests for the CFB boiler system performed as follows:
    - A. Emissions shall be measured by an approved testing service.
    - B. Emissions shall be measured for NO<sub>x</sub>, CO, PM, VOM, SO<sub>2</sub> and opacity.
    - C. Emissions testing shall be conducted under conditions that are representative of maximum emissions.
    - D. These tests shall be used as the initial compliance tests to demonstrate compliance with the limits and conditions set in this permit.
  - ii. Emission testing for PM and opacity shall also be conducted in a timely manner in accordance with 40 CFR 60.8 for other emission units that are subject to NSPS.
  - iii. In addition to the initial emission testing required above, the Permittee shall have emission tests performed within 45 days of a written request by the Illinois EPA. The Illinois EPA may request these tests if, based on observations by field personnel or other information and affected emission unit or air pollution control systems are poorly maintained or operated so as to make compliance with permit limitations uncertain.

- b. i. Unless otherwise specified or approved by the Illinois EPA or the USEPA, the following USEPA methods and procedures shall be used for testing of emissions of the CFB boiler:

Location of Sample Points	USEPA Method 1
Gas Flow and Velocity	USEPA Method 2
Flue Gas Weight	USEPA Method 3, or 3A
Moisture	USEPA Method 4
Particulate Matter	USEPA Method 5, or Method 201, or 201A (40 CFR 1, Appendix M), or Method 19 as specified in 40 CFR 60.48a(b)
Nitrogen Oxides	USEPA Method 7, 7E or 19 as specified in 40 CFR 60.48a(d)
Sulfur Dioxides	USEPA Method 6 or 19 as specified in 40 CFR 60.48a(c)
Opacity	USEPA Method 9
Carbon Monoxide	USEPA Method 10
Volatile Organic Material	USEPA Method 18, 25, or 25A

- A. The Permittee may report all PM emissions measured by USEPA Method 5 as PM<sub>10</sub>, including back half condensable particulate. If the Permittee reports USEPA Method 5 PM emissions as PM<sub>10</sub>, testing using USEPA method 201 or 201A need not be performed.
- B. Permittee may exclude methane, ethane and other exempt compounds from the results of any VOM test provided that the test protocol to quantify and correct for any such compounds is included in the test plan approved by the Illinois EPA.

- ii. The following methods and procedures shall be used for particulate matter and opacity measurements for the limestone handling and storage operations (outlet from limestone silo), as specified in 40 CFR 60.675:

PM	Method 5 or Method 17
Opacity	Method 9

- c. At least 60 days prior to the actual date of testing, a written test plan shall be submitted to the Illinois EPA for review. This plan shall describe the specific procedures for testing and shall include as a minimum:

- i. The person(s) who will be performing sampling and analysis and their experience with similar tests.
- ii. The specific conditions under which testing shall be performed including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the CFB boiler system will be tracked and recorded.
- iii. The specific determinations of emissions that are intended to be made, including sampling and monitoring locations. As part of this plan, the Permittee may set forth a strategy for performing emission testing in the normal load range of the CFB boiler.

- iv. The test method(s) which will be used, with the specific analysis method if the method can be used with different analysis methods.
- d. The Illinois EPA shall be notified prior to these tests to enable it to observe these tests. Notification for the expected date of testing shall be submitted a minimum of 30 days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of 5 working days prior to the actual date of the test. The Illinois EPA may at its discretion accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe testing.
- e. Three copies of the Final Reports for these tests shall be submitted to the Illinois EPA within 30 days after the test results are compiled and finalized. The Final Report from testing shall contain a minimum:
  - i. A summary of results;
  - ii. General information;
  - iii. Description of test method(s), including a description of sampling points, sampling train, analysis equipment, and test schedule; and
  - iv. Detailed description of test conditions, including:
    - A. Fuel consumption (in tons) of the unit being tested;
    - B. Firing rate (million Btu/hr) of the unit being tested;
    - C. Turbine/Generator output rate (MWe); and
    - D. Data and calculations, including copies of all raw data sheets and records of laboratory analysis, sample calculations, and data on equipment calibration.
- 13. The Permittee shall install, operate and maintain systems to measure the consumption of different fuels by the boiler.
- 14a. The Permittee shall install, operate, and maintain a Continuous Emissions Monitoring (CEM) system on the CFB boiler in accordance with the provisions of the Acid Rain Program (40 CFR Part 75) and the NSPS (40 CFR 60.47a) to measure CO<sub>2</sub> or O<sub>2</sub> and emissions of SO<sub>2</sub>, NO<sub>x</sub>, and opacity from the CFB boiler system. The procedures under 40 CFR 60.13, 40 CFR 60.47a(c) and the applicable procedures under 40 CFR 75 Subpart B shall be followed for the installation, evaluation and operation of these CEM systems.
  - b. At least 30 days prior to initial startup of the CFB boiler system, the Permittee shall submit to the Illinois EPA for review and comment a detailed monitoring plan. This plan shall describe the configuration and operation of the NO<sub>x</sub>, SO<sub>2</sub>, and opacity CEM systems.
  - c. These CEM monitoring systems shall be operated and collect data in accordance with the applicable provisions of the Acid Rain Program.

- 15a. The Permittee shall maintain a file of the following items:
- i. Written procedures used by the Permittee as good combustion practices and good air pollution control practice for the boiler to minimize emission in accordance with Condition 7; and
  - ii. The heat and sulfur content of the each of solid fuels fired in the boiler in Btu/lb and lb/mmBtu, respectively.
- b. The Permittee shall keep inspection, maintenance, and repair logs with dates and nature of such activities for the CFB boiler, the SNCR system and the CFB baghouse.
- i. The Permittee shall keep inspection, maintenance, and repair logs for the fabric filters associated with handling and storage of solid fuel, limestone, and ash.
- c. The Permittee shall maintain the following operation records:
- i. The quantity of each fuel consumed by the CFB boiler (tons/day);
  - ii. The quantity of electricity generated by the CFB boiler (MW/day)
  - iii. The amount of limestone consumed (tons/month); and
  - iv. The amount of SNCR reagent consumed (lb or ton/month).
- d. The Permittee shall maintain the following records related to startup, malfunction, breakdown and shutdown of the CFB boiler and SNCR system:
- i. The time and date of startup, malfunction, breakdown or shutdown and confirmation that standard practices were followed; and
  - ii. For each incident when operation continued during malfunction or breakdown with excess emissions, the following information shall be included:
    - A. Date and duration of malfunction or breakdown;
    - B. A description of the malfunction or breakdown;
    - C. The reason continued operation was necessary, including supporting documentation; and
    - D. The corrective actions used to reduce the quantity of emissions and the duration of the incident.
- e. The Permittee shall keep the following records with regards to emissions:
- i. O<sub>2</sub> or CO<sub>2</sub> concentration in the exhaust from the CFB boiler system recorded hourly.
  - ii. SO<sub>2</sub> emission rates (lb/million Btu) from the CFB boiler system recorded hourly by combining the SO<sub>2</sub> concentration (ppm) and diluent concentration measurements according to the procedures in 40 CFR 75 Appendix F.

- iii. NO<sub>x</sub> emission rates (lb/million Btu) from the CFB boiler system recorded hourly by combining the NO<sub>x</sub> concentration (ppm) and diluent concentration measurements according to the procedures in 40 CFR 75 Appendix F.
  - iv. Opacity readings from the opacity monitoring system.
  - v. Monthly and annual emissions of NO<sub>x</sub>, CO, SO<sub>2</sub>, VOM and PM from the CFB boiler system (tons/month and tons/year), compiled at least on a quarterly basis. SO<sub>2</sub> and NO<sub>x</sub> emissions may be based on data from the CEM. All other emissions shall be calculated based on fuel consumption and relevant factors developed from emission test data and fuel composition, with supporting calculations.
  - vi. Emissions of PM from handling and storage of solid fuel, limestone and ash (tons/month and tons/year).
- f. The Permittee shall maintain records that identify:
- i. Any periods during which a required continuous monitoring system was not operational, with explanation; and
  - ii. Any day in which emissions exceeded an applicable standard or limit.
- g. All records required by this permit shall be retained for a period of at least 5 years. The most recent 3 years of data must be kept on site and made available to the Illinois EPA for inspection and copying upon Illinois EPA request during normal business hours. Records may be maintained in electronic format.
16. Pursuant to the NSPS in 40 CFR 60.7, the Permittee shall furnish the Illinois EPA with written notification regarding emission units that are subject to the NSPS as follows:
- a. The date construction commenced, postmarked no later than 30 days after such date;
  - b. The actual date of initial startup postmarked within 15 days after such date; and
  - c. The date upon which demonstration of the continuous monitoring system performance commences in accordance with 60.13(c), postmarked not less than 30 days prior to such date.
- 17a. The Permittee shall comply with the applicable NSPS recordkeeping and reporting requirements in 40 CFR 60.7 and 60.49a, including the requirement to submit Compliance Reports to the Illinois EPA for the CFB boiler on a quarterly basis.
- b. If there is any other exceedance of the requirements of Conditions 2 through 6 of this permit not addressed by the NSPS quarterly report, the Permittee shall submit a report to the Illinois EPA within 30 days after the exceedance. The report shall include a description of the exceedance, a copy of relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.



- c. The Permittee shall comply with the applicable annual emission reporting requirements in 35 IAC Part 254.
  - d. The Permittee shall comply with applicable reporting requirements under the Acid Rain Program (40 CFR Part 75 Subpart G). In addition to reporting to USEPA, copies of such reports shall also be provided to the Illinois EPA, upon request.
- 18a. Two copies of any required reports and notifications concerning equipment operation, emission testing, or a monitoring system, except the Annual Emission Report required by 35 Ill. Adm. Code 254, shall be sent to the Illinois EPA at the following address unless otherwise indicated:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
Compliance Section (#40)  
P. O. Box 19276  
Springfield, Illinois 62794-9276

Telephone: 217/782-5811      Facsimile: 217/782-4710

- b. One copy of required reports and notifications, other than the Annual Emission report shall be sent to the Illinois EPA at the following address:

Illinois Environmental Protection Agency  
Division of Air Pollution Control - Regional Office  
2009 Mall Street  
Collinsville, Illinois 62234

Telephone: 618/346-5120      Facsimile: 618/346-5155

- 19a. The Permittee shall permanently shut down three existing coal fired boilers identified as Marion Units 1, 2 and 3. Shutdown of Units 1, 2, and 3 shall occur within 180 days after the CFB boiler system becomes operational. For the purpose of this permit, the CFB boiler system shall be considered operational when it begins to generate electricity for sale to customers under contract. Prior to the operational date, the unit will go through a sequence of shakedown modes including testing for the proper operation of the boiler. This period may be extended as reasonably necessary by the Illinois EPA at the written request of the Permittee if the orderly shakedown of the new boiler is interrupted and operation of the existing boilers must be resumed for the Permittee to provide electric power.
- b. The Permittee shall notify the Illinois EPA within 30 days of shutdown of each of the existing coal-fired boilers on a permanent basis.
- 20a. The Permittee shall perform the evaluation of CO emissions from the CFB boilers required by Condition 3(b)ii in accordance with a plan submitted to the Illinois EPA for review and comment. The initial plan shall be submitted to the Illinois EPA for review and comment no later than 60 days after completion of the emission tests required by Condition 12(a)(i).
- b. The plan shall provide for systematic evaluation of changes, within the normal or feasible range of operation, in the following elements as related to the monitored CO emissions:

Boiler Operating Load and Operating Settings  
Flue Gas Temperature at Selected Points in the Boiler  
Composition of Fuel Supply  
Bed and Combustion Settings, Including Excess Oxygen  
Amount and Type of Limestone Added to the Bed  
Fabric Filter Pressure Drop, Cleaning Cycle and Operation  
Opacity and Particulate Matter Emissions  
SO<sub>2</sub> Emission Rate  
NO<sub>x</sub> Emission Rate and Ammonia Slip

- c. The Permittee shall promptly begin this evaluation after the CFB boiler demonstrates compliance with the applicable emission limits as shown by emission testing and monitoring, and after Illinois EPA approves the evaluation plan required by Condition 20 (a). If necessary, the Permittee shall submit an update to the plan that describes its findings with respect to control of CO emissions during the shakedown of the boiler, which highlights possible areas of concern for the evaluation.
  - d.
    - i. This evaluation shall be completed and a detailed written report submitted to the Illinois EPA within two years after completion of the emission tests required by Condition 12(a)(i).
    - ii. This deadline may be extended for an additional year if the Permittee submits an interim report demonstrating the need for additional time to effectively evaluate CO emissions and propose an alternative limit or limits for CO emissions.
  - e.
    - i. More stringent emission limits for CO emissions shall be set as a result of this evaluation if the Illinois EPA finds that a CFB boiler can consistently comply with such limits. Additional parameters or factors, e.g., the composition of the fuel supply, may be included in such limits to address particular modes of operation during which such limits may or may not be achievable.
    - ii. If the Permittee fails to complete the evaluation or submit the required report in a timely manner, the CO emission limit shall automatically revert to the lower limit identified in Condition 3(b)(ii), i.e., 0.10 lb CO/mmBtu.
21. The approval for the above referenced project does not relieve the Permittee of the responsibility to comply with all local, state and federal regulations which are part of the applicable Illinois State Implementation Plan, as well as all other applicable federal, state and local requirements.

Please note that additional rules addressing NO<sub>x</sub> emissions from this boiler has been adopted by the Illinois Pollution Control Board in response to USEPA's NO<sub>x</sub> SIP call and the development of Illinois' plans for attainment of the ozone air quality standard in the Chicago and Metro-East ozone nonattainment areas. Refer to 35 IAC Part 217, Subpart W, NO<sub>x</sub> Trading Program for Electrical Generating Units.

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If you have any questions concerning this permit, please contact Shashi Shah at 217/782-2113.

*Donald E. Sutton*

Donald E. Sutton, P.E.  
Manager, Permit Section  
Division of Air Pollution Control

DES:SRS:jar.

cc: Region 3

## Attachment A

Table 1  
Emission Units

Unit I.D.	Description	Number	Control
CFB Boiler	Circulating Fluidized Bed Solid-fuel Fired Boiler Rated heat input- 1402 million Btu HHV/hr	1	Selective Non-Catalytic Reduction System, Limestone  Injection and Baghouse
S1, S2; S3, S4	Fuel Storage Silo	4	Baghouse
S5	Limestone Storage Silo	1	Baghouse
S6	CFB Bottom Ash Storage Silo	1	Baghouse
S7	CFB Fly Ash Storage Silo	1	Baghouse
MH1	Coal Refuse/Coal Material Handling	1	Material Characteristic -
MH2	Petroleum Coke Material Handling	1	Material Characteristic -
MH3	Tire Fuel Material Handling	1	Material Characteristic -
MH4	Wood Chips Material Handling	1	Material Characteristic -
MH5	Limestone Material Handling	1	Material Characteristic -

\* Nominal capacity rating

Table 2  
CFB Boiler Emission Limitations

Pollutant	Emission Rate	Emissions (Lb/Hr)	Emissions (tpy)
NO <sub>x</sub>	1.6 lb/MW-hr	192	841
CO	0.150 lb/mmBtu	210	921
VOM	0.01 lb/mmBtu	10.1	44.2
SO <sub>2</sub>	0.6 lb/mmBtu	841	3,690
TSP/PM <sub>10</sub>	0.011 lb/mmBtu*	15.4*	67.5*

Notes: The hourly emission limits and lb/mmBtu emission limits shall not apply during start-up, shutdown, or malfunction. Compliance shall be based on 3 - hour block average.

Tons per year (tpy) limits are based on continuous operation at the hourly emission limit and 100% annual capacity factor.

NO<sub>x</sub> and SO<sub>2</sub> emission limits are based on the applicable limit in the NSPS 40 CFR Part 60 Subpart Da. CO emission limit is based on BACT evaluation.

The hourly emission limits reflect compliance with the following emission rates: NO<sub>x</sub> - 1.6 lb/MW-hr; CO - 0.150 lb/mmBtu; VOM - 0.01 lb/mmBtu; SO<sub>2</sub> - 0.6 lb/mmBtu; and TSP/PM - 0.011 lb/mmBtu (front-half particulates only).

\* TSP and PM<sub>10</sub> emission limits only include front-half (filterable) particulates.

Attachment B

Table 1

Annual Net Emissions Change for Marion Generating Station

Pollutant	New Unit Emissions - CFB Boiler and Turbine (Tons/Year)	Emission Decreases - Shutdown of Three Boilers (Tons/Year)	Net Change (Tons/Year)	Major Modification Threshold (Tons/Year)
NO <sub>x</sub>	833.7	2,329	- 1,495.3	40
SO <sub>2</sub>	3,142.8	12,227	- 9,084.2	40
CO	888.9	55.4	833.5	100
VOM	41.5	9.5	32.1	40
TSP	78.1	83.0	- 5.0	25
PM <sub>10</sub> *	70.3	56.4	13.9	15
Lead	0.09	0.09	0	0.60
H <sub>2</sub> SO <sub>4</sub>	49.1	278.2	- 229.0	7

\* Net change evaluated in terms of filterable PM10 (front half of Method 5 Sampling Train).

Notes:

The New Unit Emissions represent the operation of the new CFB boiler, including the associated material handling operations, at a projected maximum annual capacity factor of 85%, and the operation of two new turbines at a projected maximum annual capacity factor of 22%. Construction of the CFB boiler system is addressed in this permit, while construction of the turbines is addressed in a separate permit.

The Emission Decrease represents the actual reduction in emissions from retirement of three existing boilers (Units 1 through 3), as addressed by this permit. It does not include the decrease in emissions from installation of selective catalytic reduction (SCR) on a fourth existing boiler (Unit 4), as addressed by a separate permit. The anticipated reduction in actual NO<sub>x</sub> emission from the SCR system on Unit 4 is estimated at 2361 tons/year.

The Net Change in emissions is the sum of the New Unit Emissions and the Emission Decreases. As shown, there will not be a net increase above the Major Modification Threshold for any pollutant except carbon monoxide.

SRS:jar



**STANDARD CONDITIONS FOR CONSTRUCTION/DEVELOPMENT PERMITS  
ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY**

July 1, 1985

The Illinois Environmental Protection Act (Illinois Revised Statutes, Chapter 111-1/2, Section 1039) authorizes the Environmental Protection Agency to impose conditions on permits which it issues.

The following conditions are applicable unless superseded by special condition(s).

1. Unless this permit has been extended or it has been voided by a newly issued permit, this permit will expire one year from the date of issuance, unless a continuous program of construction or development on this project has started by such time.
2. The construction or development covered by this permit shall be done in compliance with applicable provisions of the Illinois Environmental Protection Act and Regulations adopted by the Illinois Pollution Control Board.
3. There shall be no deviations from the approved plans and specifications unless a written request for modification, along with plans and specifications as required, shall have been submitted to the Agency and a supplemental written permit issued.
4. The permittee shall allow any duly authorized agent of the Agency upon the presentation of credentials, at reasonable times:
  - a. to enter the permittee's property where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit,
  - b. to have access to and to copy any records required to be kept under the terms and conditions of this permit,
  - c. to inspect, including during any hours of operation of equipment constructed or operated under this permit, such equipment and any equipment required to be kept, used, operated, calibrated and maintained under this permit,
  - d. to obtain and remove samples of any discharge or emissions of pollutants, and
  - e. to enter and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.
5. The issuance of this permit:
  - a. shall not be considered as in any manner affecting the title of the premises upon which the permitted facilities are to be located,
  - b. does not release the permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities,
  - c. does not release the permittee from compliance with other applicable statutes and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations,
  - d. does not take into consideration or attest to the structural stability of any units or parts of the project, and

Environmental Protection Agency  
Bureau of Air

November 1, 1992

For assistance in preparing a permit application,  
contact the Permit Section:

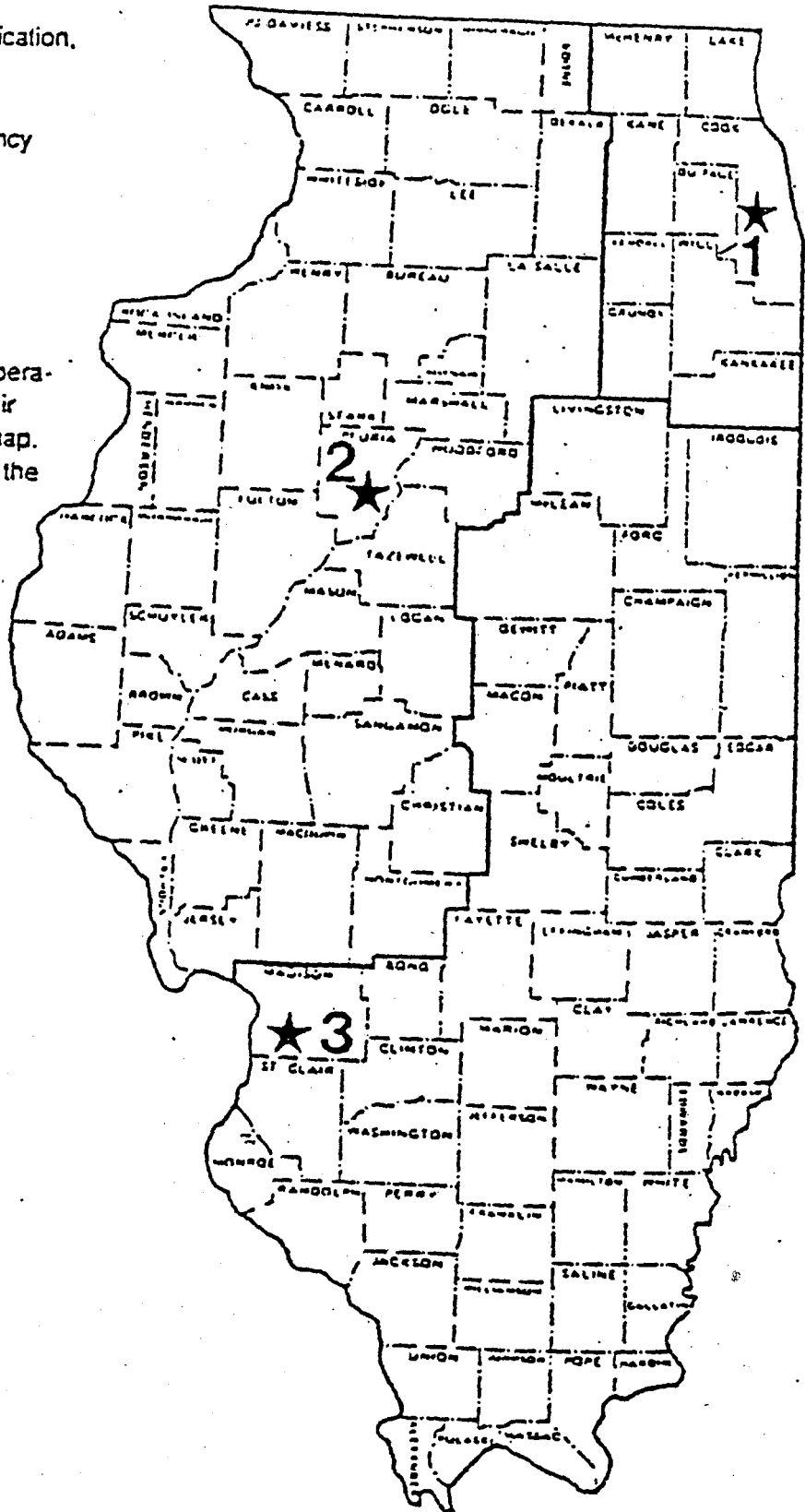
Illinois Environmental Protection Agency  
Division of Air Pollution Control  
Permit Section  
2200 Churchill Road  
Springfield, Illinois 62706  
217/782-2113

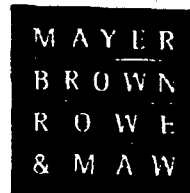
Or contact a regional office of the Field Operations Section. The regional offices and their areas of responsibility are shown on the map. The addresses and telephone numbers of the regional offices are as follows:

ILLINOIS EPA  
Region 1  
BUREAU OF AIR, FOS  
9511 WEST HARRISON  
DES PLAINES, IL 60016  
312/47-294-4000

Illinois EPA  
Region 2  
5415 North University  
Peoria, Illinois 61614  
309/693-5461

Illinois EPA  
Region 3  
2009 Mall Street  
Collinsville, Illinois 62234  
618/346-5120





October 21, 2004

VIA UPS

Mr. Donald E. Sutton  
Permit Manager/Permit Section,  
Division of Air Pollution Control  
Illinois Environmental Protection Agency  
1021 North Grand Avenue East  
Springfield, IL 62702

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Patrick J. McNamey  
Direct Tel (312) 701-7609  
Direct Fax (312) 706-8747  
pjmcmey@mayerbrownrowe.com

Re: Southern Illinois Power Cooperative ("SIPC")  
Application for Certification of Circulating  
Fluidized Bed Boiler ("CFB") as a Low Sulfur  
Dioxide Emission Coal Fueled Device

Dear Mr. Sutton:

This letter will supplement our Application for Certification of SIPC's CFB as a low sulfur dioxide emission coal fueled device which was filed with the IEPA on September 29, 2004. Our Application, although submitted on an IEPA Pollution Control Certification Application, was and still is a request for certification of the CFB as a low sulfur dioxide emission coal fueled device as defined in Title 35, Subtitle A, Chapter 1, Section 125.200(b)(1) of the Illinois Administrative Code and in Section 11-40 of the Illinois Property Tax Code (35 ILCS 200/11-40 West 2004).

Consistent with the description of the CFB contained in section (d) of our Application, this letter confirms that the CFB is fueled exclusively by locally available, Illinois coal and burns the fuel by an advanced process which eliminates the need for any additional sulfur abatement measures.

Based upon the foregoing, the entire CFB, including all related machinery and equipment, qualifies as a low sulfur dioxide emission coal fueled device and we respectfully request that SIPC's Application for Certification be granted.

Brussels Charlotte Chicago Cologne Frankfurt Houston London Los Angeles Manchester New York Palo Alto Paris Washington, D.C.  
Independent Mexico City Correspondent: Jauregui, Navarrete, Nader y Rojas, S.C.

Mayer, Brown, Rowe & Maw LLP operates in combination with our associated English limited liability partnership in the offices listed above.

— Exhibit B



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Mr. Donald E. Sutton  
October 21, 2004  
Page 2

Thank you for your professional review of the matter. Please contact me if you need any additional information.

Very truly yours,



Patrick J. McNerney

cc: Ms. Angela L. Desmond