DEPARTMENT OF ENVIRONMENTAL QUALITY
KATHLEEN BABINEAUX BLANCO
GOVERNOR
MIKE D. McDANIEL, Ph.D.
SECRETARY

Certified Mail No.

Agency Interest No. 11917
Activity No.: PER20040002

Jeff Baudier
President
Louisiana Generating, LLC
112 Telly St.
New Roads, LA 70760

RE: Prevention of Significant Deterioration (PSD) Permit, PSD-LA-660(M-1), Big Cajun 1 Power Plant (Steam)
Louisiana Generating, LLC, Jarreau, Pointe Coupee Parish, Louisiana

Dear Mr. Baudier:

Enclosed is your permit, PSD-LA-660(M-1). Construction of the proposed project is not allowed until such time as the corresponding operating permit is issued.

Should you have any questions concerning the permit, contact Dustin Duhon at 225-219-3057.

Chuck Carr Brown, Ph.D.
Assistant Secretary

_____
Date

CCB:dcd
c: EPA Region VI

ENVIRONMENTAL SERVICES
: PO BOX 4313, BATON ROUGE, LA 70821-4313
P:225-219-3181 F:225-219-3309
WWW.DEQ.LOUISIANA.GOV

PSD-LA-660(M-1)
Agency Interest No.: 11917

AUTHORIZATION TO MODIFY AND OPERATE A MAJOR STATIONARY SOURCE PURSUANT TO THE PREVENTION OF SIGNIFICANT DETERIORATION REGULATIONS IN LOUISIANA ENVIRONMENTAL REGULATORY CODE, LAC 33:III.509

In accordance with the provisions of the Louisiana Environmental Regulatory Code, LAC 33:III.509,

Louisiana Generating, LLC
112 Telly St.
New Roads, LA 70760

is authorized to construct a CFB Boiler at the Louisiana Generating LLC - Big Cajun 1 Power Plant (Steam) near

7807 River Rd.
Jarreau, LA 70749

subject to the emissions limitations, monitoring requirements and other conditions set forth hereinafter.

This permit and authorization to construct shall expire at midnight on _____, 2009, unless physical on site construction has begun by such date, or binding agreements or contractual obligations to undertake a program of construction of the source are entered into by such date.

Signed this _____ day of _____, 2007.

Chuck Carr Brown, Ph.D.
Assistant Secretary
Office of Environmental Services

BRIEFING SHEET

BIG CAJUN 1 POWER PLANT (STEAM)
AGENCY INTEREST NO.: 11917
LOUISIANA GENERATING, LLC
JARREAU, POINTE COUPEE PARISH, LOUISIANA
PSD-LA-660(M-1)

PURPOSE

To repower two existing steam boilers with a single circulating fluidized bed (CFB) boiler.

RECOMMENDATION

Approval of the proposed construction and issuance of a permit.

REVIEWING AGENCY

Louisiana Department of Environmental Quality, Office of Environmental Services, Air Permits Division.

PROJECT DESCRIPTION

The CFB boiler will be designed to fire petroleum coke, coal, bagasse, and non-chemically treated wood products, with a maximum heat input rate of 2,330 MMBTU/hr. In a CFB boiler, solid fuel and a sorbent (typically limestone) are jointly fed directly to the combustion chamber. Primary air is injected from the bottom of the combustion chamber to provide combustion air as well as to fluidize the burning bed. Fluidization of the bed allows for high heat transfer rates at relatively low combustion temperatures. Because of the turbulence and velocity in the circulating bed, the fuel mixes with the bed material quickly and uniformly. Secondary air is introduced at various levels to ensure solids circulation, provide staged combustion for NOx reduction as well as control of carbon monoxide (CO) and volatile organic compounds (VOCs), and supply air for continuous combustion in the upper part of the combustion chamber.

As fuel is added to the CFB boiler it is quickly heated above its ignition point, ignites, and becomes part of the burning bed. The fuel particles are entrained within the bed until they are consumed or removed in either the gas stream or with the bed ash. Entrainment of the fuel particles in the gas stream occurs when their size is in the range where the terminal and gas velocities are equal. As the fuel particle size decreases to the point that the terminal velocity is exceeded by the gas velocity, the particles are blown from the bed, collected by a particle separator, and returned to the boiler.

In addition, Boiler 1 and Boiler 2 (EQT 10 and EQT 11) will be decommissioned and dismantled prior to construction of the CFB Boiler (EQT 1).

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Estimated emissions in tons per year are as follows:

Pollutant	Net Emissions Increase	PSD de Minimis	PSD Review Required
PM_{10}	112.52	15	Yes
SO_2	1458.00	40	Yes
NO_x	680.00	40	Yes
CO	972.00	100	Yes
VOC	45.70	40	Yes
Sulfuric acid	13.60	7	Yes

These emission rates reflect a revision to the NO_x emission limitations set forth in Permit No. PSD-LA-660 for the combustion turbines (EQT 2 and EQT 3). This revision was necessary as the turbines were never able to achieve the vendor-guaranteed NO_x emission rate, which formed the basis of the BACT determination in Permit No. PSD-LA-660, even after installation of additional control technologies (water injection) and repeated operational and mechanical adjustments. The BACT emission limitations for these sources are revised in this permit.

TYPE OF REVIEW

PM_{10}, NO_X, CO, SO_2, VOC, and sulfuric acid emission rates are above the PSD significance levels. Therefore, the requested permit was reviewed in accordance with PSD regulations for PM_{10}, NO_X, CO, SO_2, VOC, and sulfuric acid emissions. The selection of control technology based on the Best Available Control Technology (BACT) analysis included consideration of control of toxic materials.

BEST AVAILABLE CONTROL TECHNOLOGY

PM_{10}, NO_X, CO, SO_2, VOC, and sulfuric acid emissions are above PSD de minimis levels and must undergo PSD analysis. Control of PM_{10}, NO_X, CO, SO_2, VOC, and sulfuric acid emissions were analyzed using a "top down" approach.

Circulating fluidized bed technology combined with a fabric filter are proposed as BACT for PM_{10} for the CFB Boiler. The proposed PM_{10} limit is 0.011 lb/MMBTU.

Based on an evaluation of standard control methods, best operating practices and telescopic chutes are proposed as BACT for PM_{10} for the Emergency Pile Material Handling and Emergency Wind

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Pile Erosion sources.

Based on an evaluation of standard control methods, wind screens are proposed as BACT for PM_{10} for the Outside Conveyors.

Based on an evaluation of standard control methods, wind screens and dry fogging are proposed as BACT for PM_{10} for the Barge Unloader, Unloading Hopper to Conveyor C-1, Conveyor C-1 to C-2, Conveyor C-2 to Conveyor C-3 or C-4, and Conveyor C-9 to Conveyor C-10 sources.

Based on an evaluation of standard control methods, paving all roads within the Big Cajun I Power Plant site is proposed as BACT for PM_{10} for Fugitive Dust from Paved Roads.

Based on an evaluation of standard control methods, a closed vent system that vents back into the ash silo is proposed as BACT for PM_{10} for the Ash Truck Loading.

Based on an evaluation of standard control methods, fabric filters are proposed as BACT for PM_{10} for the Limestone Storage Dome, Fuel Storage Dome, Fuel Crusher House, Fuel Silos, Limestone Silo and Crusher, Ash Silo, and Lime Silo.

Based on the RBLC search and the economic infeasibility of some control devices, circulating fluidized bed technology combined with selective non-catalytic reduction are proposed as BACT for NOx for the CFB Boiler. The proposed NOx limit is 0.07 lb/MMBTU.

Based on the RBLC search, good combustion practices are proposed as BACT for CO for the CFB Boiler. The proposed CO limits are 0.10 lb/MMBTU when the boiler operates at greater than or equal to 60 percent of its maximum heat input of 2,330 MMBTU/hr, and 0.15 lb/MMBTU when the boiler operates at less than 60 percent of its maximum heat input of 2,330 MMBTU/hr.

Based on the RBLC search, circulating fluidized bed technology combined with limestone injection and a flue gas desulfurization scrubber are proposed as BACT for SO_2 and sulfuric acid for the CFB Boiler. The proposed SO_2 limit is 0.15 lb/MMBTU. The proposed sulfuric acid limit is 0.0012 lb/MMBTU.

Based on the RBLC search, good combustion practices are proposed as BACT for VOC for the CFB Boiler. The proposed VOC limit is 0.0047 lb/MMBTU.

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AIR QUALITY IMPACT ANALYSIS

Prevention of Significant Deterioration (PSD) regulations requires an analysis of existing air quality for those pollutants emitted in significant amounts from a proposed major modification.

Screening dispersion modeling indicates maximum ground level concentrations of NO_X and CO are below their respective ambient significance levels and preconstruction monitoring exemption levels. No preconstruction monitoring or increment analysis or refined modeling is required for NO_X, and CO. Screening dispersion modeling indicates maximum ground level concentrations of PM_{10} and SO_2 are above their respective ambient significance levels, but below preconstruction monitoring exemption levels. Refined modeling for these pollutants is required.

Dispersion modeling indicates the impacts of PM_{10} and SO_2 are below their respective National Ambient Air Quality Standards (NAAQS) and within the allowable increment consumption limits of these pollutants.

ADDITIONAL IMPACTS

Soils, vegetation, and visibility will not be adversely impacted by the proposed facility, nor will any Class I area be affected. Approximately 67 new permanent jobs will be created.

PROCESSING TIME

Application Dated:	February 26, 2004
Application Received:	February 27, 2004
Additional Information Dated:	May 24, 2006; July 13, 2006; September 22, 2006; October 4, 2006; March 15, 2007; and May 14, 2007
Effective Completeness:	May 15, 2007

PUBLIC NOTICE

A notice requesting public comment on the permit was published in The Advocate, Baton Rouge, Louisiana, on Month XX, 20XX; and in the <LOCAL NEWSPAPER>, <NEAREST CITY>, Louisiana, on Month XX, 20XX. The proposed permit was also submitted to US EPA Region

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VI. A copy of the public notice was mailed to concerned citizens listed in the Office of Environmental Services Public Notice Mailing List on **<date>**. All comments will be considered prior to the final permit decision.

PRELIMINARY DETERMINATION SUMMARY

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AGENCY INTEREST NO.: 11917
LOUISIANA GENERATING, LLC
JARREAU, POINTE COUPEE PARISH, LOUISIANA
PSD-LA-660(M-1)
APRIL 3, 2007

I. APPLICANT

Louisiana Generating, LLC
112 Telly St.
New Roads, LA 70760

II. LOCATION

Louisiana Generating LLC - Big Cajun 1 Power Plant (Steam) is located at 7807 River Rd., Jarreau, Louisiana. Approximate UTM coordinates are 657.57 kilometers East and 3394.44 kilometers North, Zone 15.

III. PROJECT DESCRIPTION

This project will require the addition of the following sources:

- CFB Boiler (EQT 1).
- A material handling transfer conveyor system, including storage piles and fuel silos.
  FUG 1 – FUG 12 represents the emission points that result from this system.
- Lime Silo (FUG 17), Limestone Crusher (FUG 14), and Limestone Transfer Tower (FUG 13).
- Ash Silo (FUG 15) and Ash Truck Loading operations (FUG 16).

Estimated emissions in tons per year are as follows:

Pollutant	Net Emissions Increase	PSD de Minimis
PM_{10}	112.40	15
SO_2	1458.00	40
NO_x	680.00	40
CO	972.00	100
VOC	45.70	40
Sulfuric acid	13.60	7

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IV. SOURCE IMPACT ANALYSIS

A proposed net increase in the emission rate of a regulated pollutant above de minimis levels for modified major sources requires review under PSD regulations, LAC 33:III.509. PSD permit reviews of proposed new or modified major stationary sources require the following analyses:

A. A determination of the Best Available Control Technology (BACT);

B. Analysis of the existing air quality and a determination of whether or not preconstruction or postconstruction monitoring will be required;

C. An analysis of the source's impact on total air quality to ensure compliance with the National Ambient Air Quality Standards (NAAQS);

D. An analysis of the PSD increment consumption;

E. An analysis of the source related growth impacts;

F. An analysis of source related impacts on soils, vegetation, and visibility;

G. A Class I Area impact analysis; and

H. An analysis of the impact of toxic compound emissions.

A. BEST AVAILABLE CONTROL TECHNOLOGY

Under current PSD regulations, an analysis of "top down" BACT is required for the control of each regulated pollutant emitted from a modified major source in excess of the specified significant emission rates. The top down approach to the BACT process involves determining the most stringent control technique available for a similar or identical source. If it can be shown that this level of control is infeasible based on technical, environmental, energy, and/or cost considerations, then it is rejected and the next most stringent level of control is determined and similarly evaluated. This process continues until a control level is arrived at which cannot be eliminated for any technical, environmental, or economic reason. A technically feasible control strategy is one that has been demonstrated to function efficiently on identical or similar processes.

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Louisiana Generating, LLC proposes to construct a circulating fluidized bed boiler and associated fuel loading equipment at the Big Cajun 1 Power Plant (Steam). PM_{10}, NO_x, CO, SO_2, VOC, and sulfuric acid emissions from this project will be above PSD de minimis levels. A BACT analysis is required for these PSD regulated pollutants.

BACT analysis for NO_x

CFB-1 – CFB Boiler (EQT 1)

The RBLC listed two possible control technologies for a CFB boiler. They were circulating fluidized bed technology and selective non-catalytic reduction (SNCR). Though it was not listed in the RBLC, selective catalytic reduction (SCR) was also analyzed.

An SCR is able to control NOx emission using a heated catalyst bed. Ammonia is injected into the flue gas stream. The ammonia is absorbed onto the catalyst surface and reacts with NOx in the presence of oxygen to produce water and elemental nitrogen. An SNCR reduces NOx in much the same way, except that it does so without the aid of a catalyst.

SCR control was rejected because high concentrations of particulate matter can plug the catalyst, thereby reducing efficiency. This would require a fabric filter to remove particulate from the stream and re-heating of the air stream so that the SCR can work effectively. The SNCR can control NOx to the same efficiency without the need to combust additional fuel and emit additional pollutants in order to reheat the air stream.

Based on environmental impacts analysis of the control strategies listed above, circulating fluidized bed technology in conjunction with selective non-catalytic reduction, which limit NOx emissions from the CFB Boiler to 0.07 lb/MMBTU over a 30-day rolling averaging period, were determined to be BACT.

BACT analysis for SO_2 and Sulfuric Acid

CFB-1 – CFB Boiler (EQT 1)

The RBLC listed three possible control technologies for a CFB boiler. They are circulating fluidized bed technology, wet flue gas desulfurization, and dry flue gas desulfurization. Though it was not listed in the RBLC, fuel washing and fuel switching were also analyzed.

Fuel washing is used to remove any inorganic sulfur impurities that may be contained in the fuel. Fuel washing is not feasible for this project. Petroleum coke, bagasse, and non-chemically treated wood do not contain significant amounts of inorganic sulfur. Any sulfur contained in these fuels is organic sulfur and can not be removed by washing. Performing fuel washing on coal reduces the economic efficiency of the boiler as more heat is needed to evaporate the water entrained in the coal. In addition, it is intended for this boiler to be able to burn coals that come from various sources and with varying sulfur contents. It would be very difficult to determine the correct level of washing necessary for each coal variety.

Wet flue gas desulfurization (wet FGD) uses a lime or limestone slurry as a scrubbing liquid. This liquid is sprayed into an absorber, where the lime or limestone reacts with the SO_2 and thereby removes it from the air stream. The resulting slurry must be dewatered in ponds and landfills prior to disposal. Wet FGD was determined to be infeasible for this project. Wet FGD requires a lot of land area and support equipment to operate. The Big Cajun I site is limited to 75 total acres for the site, which includes the area used by existing equipment. Operations at the site would become exceedingly difficult if this control technology were installed.

Based on economic and energy impacts analyses of the control strategies listed above, circulating fluidized bed technology with dry flue gas desulfurization which limit SO_2 emissions from the CFB Boiler to 0.15 lb/MMBTU over a 30-day rolling averaging period and sulfuric acid emissions to 0.0012 lb/MMBTU over a 30-day rolling averaging period were determined to be BACT.

<u>BACT analysis for CO</u>

CFB-1 – CFB Boiler (EQT 1)

The RBLC listed two possible control technologies for a CFB boiler. They were circulating fluidized bed technology and good combustion practices.

Based on an analysis of the control strategies listed above, circulating fluidized bed technology and good combustion practices which limit CO emissions from the CFB Boiler to 0.10 lb/MMBTU over a 30-day rolling averaging period when operating at greater than or equal to sixty percent of the maximum heat input and 0.15 lb/MMBTU over a 24-hour averaging period when operating at less than sixty percent of the maximum heat input were determined to be BACT.

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BACT analysis for VOC

CFB-1 – CFB Boiler (EQT 1)

The RBLC listed two possible control technologies for a CFB boiler. They were circulating fluidized bed technology and good combustion practices.

Based on an analysis of the control strategies listed above, circulating fluidized bed technology and good combustion practices which limit VOC emissions from the CFB Boiler to 0.0047 lb/MMBTU over a 30-day rolling averaging period were determined to be BACT.

BACT analysis for PM and PM_{10}

Eighteen sources at this facility must address BACT for particulate matter.

CFB-1 – CFB Boiler (EQT 1)

The RBLC listed one possible control technologies for a CFB boiler. It was a fabric filter.

Based on an analysis of the control strategies listed above, a fabric filter which limits particulate matter emissions from the CFB Boiler to 0.011 lb/MMBTU over a 30-day rolling averaging period was determined to be BACT.

E1 – Emergency Pile Material Handling (FUG 1)

Standard methods exist to control particulate matter emissions during material handling operations. These control methods include fabric filters, wind screens, wet suppression, enclosures, telescopic chutes, and water sprays.

Based on an analysis of the control strategies listed above, best operating practices and telescopic chutes are proposed as BACT for PM_{10}.

FUG 2 – Material Handling – Outside Conveyors (FUG 2)

Standard methods exist to control particulate matter emissions during material handling operations. These control methods include fabric filters, wind screens, wet suppression, enclosures, telescopic chutes, and water sprays.

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Based on an analysis of the control strategies listed above, wind screens are proposed as BACT for PM_{10} for the Outside Conveyors.

FUG 3 – Emergency Pile Wind Erosion (FUG 3)

Standard methods exist to control particulate matter emissions during material handling operations. These control methods include fabric filters, wind screens, wet suppression, enclosures, telescopic chutes, and water sprays.

Based on an analysis of the control strategies listed above, best operating practices and telescopic chutes are proposed as BACT for PM_{10}.

FUG 4 – Fugitive Dust from Paved Roads (FUG 4)

Paving all roads within the Big Cajun I Power Plant site is proposed as BACT for PM_{10}.

TP1 – Transfer Point – Barge Unloader (FUG 5)

Standard methods exist to control particulate matter emissions during material handling operations. These control methods include fabric filters, wind screens, wet suppression, enclosures, telescopic chutes, and water sprays.

Based on an analysis of the control strategies listed above, wind screens and dry fogging are proposed as BACT for PM_{10}.

TP2 – Transfer Point – Unloading Hopper to Conveyor C-1 (FUG 6)

Standard methods exist to control particulate matter emissions during material handling operations. These control methods include fabric filters, wind screens, wet suppression, enclosures, telescopic chutes, and water sprays.

Based on an analysis of the control strategies listed above, wind screens and dry fogging are proposed as BACT for PM_{10}.

TP3 – Transfer Point – Conveyor C-1 to Conveyor C-2 (FUG 7)

Standard methods exist to control particulate matter emissions during material handling

operations. These control methods include fabric filters, wind screens, wet suppression, enclosures, telescopic chutes, and water sprays.

Based on an analysis of the control strategies listed above, wind screens and dry fogging are proposed as BACT for PM_{10}.

TP4 – Transfer House 1 – Conveyor C-2 to Conveyor C-3 or C-4 (FUG 8)

Standard methods exist to control particulate matter emissions during material handling operations. These control methods include fabric filters, wind screens, wet suppression, enclosures, telescopic chutes, and water sprays.

Based on an analysis of the control strategies listed above, wind screens and dry fogging are proposed as BACT for PM_{10}.

TP5 – Limestone Storage Dome – Dust Collection System (FUG 9)

Standard methods exist to control particulate matter emissions during material handling operations. These control methods include fabric filters, wind screens, wet suppression, enclosures, telescopic chutes, and water sprays.

Based on an analysis of the control strategies listed above, fabric filters are proposed as BACT for PM_{10}.

TP6 – Fuel Storage Dome – Dust Collection System (FUG 10)

Standard methods exist to control particulate matter emissions during material handling operations. These control methods include fabric filters, wind screens, wet suppression, enclosures, telescopic chutes, and water sprays.

Based on an analysis of the control strategies listed above, fabric filters are proposed as BACT for PM_{10}.

TP7 – Fuel Crusher House – Dust Collection System (FUG 11)

Standard methods exist to control particulate matter emissions during material handling operations. These control methods include fabric filters, wind screens, wet suppression, enclosures, telescopic chutes, and water sprays.

Based on an analysis of the control strategies listed above, fabric filters are proposed as BACT for PM_{10}.

TP8 – Fuel Silos – Dust Collection System (FUG 12)

Standard methods exist to control particulate matter emissions during material handling operations. These control methods include fabric filters, wind screens, wet suppression, enclosures, telescopic chutes, and water sprays.

Based on an analysis of the control strategies listed above, fabric filters are proposed as BACT for PM_{10}.

TP9 – Limestone Transfer Tower – Conveyor C-9 to Conveyor C-10 (FUG 13)

Standard methods exist to control particulate matter emissions during material handling operations. These control methods include fabric filters, wind screens, wet suppression, enclosures, telescopic chutes, and water sprays.

Based on an analysis of the control strategies listed above, wind screens and dry fogging are proposed as BACT for PM_{10}.

TP10 – Limestone Silo and Crusher – Dust Collection System (FUG 14)

Standard methods exist to control particulate matter emissions during material handling operations. These control methods include fabric filters, wind screens, wet suppression, enclosures, telescopic chutes, and water sprays.

Based on an analysis of the control strategies listed above, fabric filters are proposed as BACT for PM_{10}.

TP11 – Ash Silo – Dust Collection System (FUG 15)

Standard methods exist to control particulate matter emissions during material handling operations. These control methods include fabric filters, wind screens, wet suppression, enclosures, telescopic chutes, and water sprays.

Based on an analysis of the control strategies listed above, fabric filters are proposed as

BACT for PM_{10}.

TP12 – Ash Truck Loading (FUG 16)

Standard methods exist to control particulate matter emissions during material handling operations. These control methods include fabric filters, wind screens, wet suppression, enclosures, telescopic chutes, and water sprays.

Based on an analysis of the control strategies listed above, a closed vent system that vents back into the ash silo is proposed as BACT for PM_{10}.

TP13 – Lime Silo – Dust Collection System (FUG 17)

Standard methods exist to control particulate matter emissions during material handling operations. These control methods include fabric filters, wind screens, wet suppression, enclosures, telescopic chutes, and water sprays.

Based on an analysis of the control strategies listed above, fabric filters are proposed as BACT for PM_{10}.

B. ANALYSIS OF EXISTING AIR QUALITY

PSD regulations require an analysis of existing air quality for those pollutant emissions that increase significantly from a proposed major modification. PM_{10}, NO_x, CO, SO_2, and VOC are pollutants of concern in this case.

Screening dispersion modeling of PM_{10} emissions from the proposed project indicates the 24-hour average maximum off-site ground level concentration is 8.29 $\mu g/m^3$. This concentration exceeds the modeling significance impact level of 5 $\mu g/m^3$. Since the maximum-modeled PM_{10} emissions exceed the applicable modeling significance level, a full impact analysis is required for PM_{10}. A full impact analysis shows that the background concentration is 75 $\mu g/m^3$. When combined with the maximum modeled concentration of 39.4 $\mu g/m^3$, the combined impact is found to be 114.4 $\mu g/m^3$. This concentration does not exceed the NAAQS standard of 150 $\mu g/m^3$.

The 24-hour average maximum off-site ground level concentration for PM_{10} does not exceed the preconstruction monitoring threshold of 10 $\mu g/m^3$. Therefore, no preconstruction monitoring is required.

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Screening dispersion modeling of NO_x emissions from the proposed project indicates the annual average of maximum off-site ground level concentration is 0.38 $\mu g/m^3$. This concentration does not exceed the modeling significance impact level of 1 $\mu g/m^3$. Since the maximum-modeled NO_x emissions do not exceed the applicable modeling significance level, a full impact analysis is not required for NO_x.

The annual average maximum off-site ground level concentration for NO_x does not exceed the preconstruction monitoring threshold of 14 $\mu g/m^3$. Therefore, no preconstruction monitoring is required.

Screening dispersion modeling of CO emissions from the proposed project indicates the 1-hour average and 8-hour average of maximum off-site ground level concentrations are 46.66 $\mu g/m^3$ and 17.96 $\mu g/m^3$, respectively. These concentrations do not exceed the modeling significance impact levels of 2,000 $\mu g/m^3$ and 500 $\mu g/m^3$, respectively. Since the maximum-modeled CO emissions do not exceed the applicable modeling significance levels, a full impact analysis is not required for CO.

The 8-hour average maximum off-site ground level concentration for CO does not exceed the preconstruction monitoring threshold of 575 $\mu g/m^3$. Therefore, no preconstruction monitoring is required.

Screening dispersion modeling of SO_2 emissions from the proposed project indicates the 3-hour, 24-hour, and annual averages of maximum off-site ground level concentrations are 39.43 $\mu g/m^3$, 11.65 $\mu g/m^3$, and 0.67 $\mu g/m^3$, respectively. These concentrations exceed the modeling significance impact levels of 25 $\mu g/m^3$ for the 3-hour average and 5 $\mu g/m^3$ for the 24-hour average. Since the maximum-modeled SO_2 emissions exceed the applicable modeling significance levels, a full impact analysis is required for SO_2. A full impact analysis shows that the background concentrations for the 3-hour and 24-hour averages are 566.58 $\mu g/m^3$ and 172.9 $\mu g/m^3$, respectively. When combined with the maximum modeled concentrations of 410.6 $\mu g/m^3$ for the 3-hour average and 122.3 $\mu g/m^3$ for the 24-hour average, the combined impact is found to be 977.2 $\mu g/m^3$ and 295.2 $\mu g/m^3$, respectively. These concentrations do not exceed the NAAQS standards of 1,300 $\mu g/m^3$ and 365 $\mu g/m^3$, respectively.

The 24-hour average maximum off-site ground level concentration for SO_2 does not exceed the preconstruction monitoring threshold of 13 $\mu g/m^3$. Therefore, no preconstruction monitoring is required.

Emissions of VOC are less than 100 tons per year. Thus, an ambient air quality analysis and preconstruction monitoring are not required.

The summary is shown in Table II.

C. NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) ANALYSIS

Because ISCST3 modeling analyses indicated concentrations of NO_x and CO would be below their respective PSD ambient significance levels, refined NAAQS modeling for these pollutants was not required.

Because the maximum modeled SO_2 and particulate matter impacts exceeded their respective PSD significance levels, refined NAAQS modeling was required. Refined modeling demonstrates compliance with the SO_2 and particulate matter NAAQS.

D. PSD INCREMENT ANALYSIS

PM_{10} increment modeling was conducted, as was SO_2 increment modeling for both 3-hour and 24-hour averaging periods. The modeling predicted concentrations will be compliant with PSD increments. PSD limits were not exceeded at any significant receptors.

E. SOURCE RELATED GROWTH IMPACTS

Operation of this facility is not expected to have any significant effect on residential growth or industrial/commercial development in the area of the facility. No significant net change in employment, population, or housing will be associated with the project. As a result, there will not be any significant increases in pollutant emissions indirectly associated with Louisiana Generating LLC's proposal. Secondary growth effects will include temporary construction related jobs and approximately sixty-seven permanent jobs.

F. SOILS, VEGETATION, AND VISIBILITY IMPACTS

There will be no significant impact on area soils, vegetation, or visibility.

G. CLASS I AREA IMPACTS

A Class I area impact analysis was performed to determined the affect of this proposed

project on the Breton National Wildlife Area, which is the nearest Class I area. This Class I area is located approximately 250 kilometers from the Big Cajun I Power Plant.

The Class I area impact analysis included air quality impact, deposition impact, and visibility impairment analyses. The results of these analyses showed an insignificant impact on air quality. None of the modeled pollutants exceeded their respective significance impact levels. The deposition flux was estimated to be below significant threshold levels for both nitrogen and sulfur. The visibility impairment was modeled to be less than five (5) percent in all 24-hour periods. As a result of this analysis, there was no predicted adverse impact on air quality or visibility and no adverse impact as a result of deposition.

H. TOXIC IMPACT

The selection of control technology based on the BACT analysis included consideration of control of toxic emissions.

V. CONCLUSION

The Air Permits Division has made a preliminary determination to approve the modification of the Louisiana Generating LLC, Big Cajun 1 Power Plant (Steam), Jarreau, Pointe Coupee Parish, Louisiana, subject to the attached specific and general conditions. In the event of a discrepancy in the provisions found in the application and those in this Preliminary Determination Summary, the Preliminary Determination Summary shall prevail.

SPECIFIC CONDITIONS

BIG CAJUN 1 POWER PLANT (STEAM)
AGENCY INTEREST NO.: 11917
LOUISIANA GENERATING, LLC
JARREAU, POINTE COUPEE PARISH, LOUISIANA
PSD-LA-660(M-1)

1. The permittee is authorized to operate in conformity with the specifications submitted to the Louisiana Department of Environmental Quality (LDEQ) as analyzed in LDEQ's document entitled "Preliminary Determination Summary" dated April 3, 2007, and subject to the following emissions limitations and other specified conditions. Specifications submitted are contained in the application and Emission Inventory Questionnaire dated February 26, 2004, along with supplemental information dated May 24, 2006, July 13, 2006, September 22, 2006, October 4, 2006, and March 15, 2007.

MAXIMUM ALLOWABLE EMISSIONS RATES

ID No.	Description		PM_{10}	SO_2	NO_X	CO	VOC	H_2SO_4
EQT 1	CFB Boiler (CFB-1)	lb/MM Btu	0.011	0.15	0.07	0.10	0.0047	0.0012
			†0.015	†0.20	†0.15	†*0.15	†0.0070	-
		lb/hr	25.60	383.00	179.00	255.00	12.00	3.110
			-	*1877.80	*249.60	*332.90	-	-
		TPY	107.00	1458.00	680.00	973.69	45.70	13.600
EQT 2	Combustion Turbine Generator #1 (CTG-1)	***ppm(v)	-	-	23	**25	-	-
		lb/hr	-	-	171.40	102.80	-	-
		TPY	-	-	175.40	125.90	-	-
EQT 3	Combustion Turbine Generator #2 (CTG-2)	***ppm(v)	-	-	23	**25	-	-
		lb/hr	-	-	171.40	102.80	-	-
		TPY	-	-	175.40	125.90	-	-
FUG 1	Transfer Point – Emergency Pile Handling (FUG1)	lb/hr	0.80	-	-	-	-	-
		TPY	0.03					
FUG 2	Material Handling – Outside Conveyors (FUG2)	lb/hr	1.88	-	-	-	-	-
		TPY	1.42					
FUG 3	Emergency Pile Wind Erosion (FUG3)	lb/hr	1.48	-	-	-	-	-
		TPY	0.04					
FUG 4	Fugitive Dust from Paved Roads (FUG4)	lb/hr	1.21	-	-	-	-	-
		TPY	3.54					
FUG 5	Transfer Point – Barge Unloader (TP1)	lb/hr	0.13	-	-	-	-	-
		TPY	0.03					
FUG 6	Transfer Point – Unloading Hopper to Conveyor C-1 (TP2)	lb/hr	0.13	-	-	-	-	-
		TPY	0.03					
FUG 7	Transfer Point – Conveyor C-1 to Conveyor C-2 (TP3)	lb/hr	0.13	-	-	-	-	-
		TPY	0.03					

SPECIFIC CONDITIONS

BIG CAJUN 1 POWER PLANT (STEAM)
AGENCY INTEREST NO.: 11917
LOUISIANA GENERATING, LLC
JARREAU, POINTE COUPEE PARISH, LOUISIANA
PSD-LA-660(M-1)

FUG 8	Transfer House 1 – Conveyor C-2 to Conveyor C-3 or C-4 (TP4)	lb/hr TPY	0.06 0.03	-	-	-	-	-
FUG 9	Limestone Storage Dome – Dust Collection System (TP5)	lb/hr TPY	0.01 0.01	-	-	-	-	-
FUG 10	Fuel Storage Dome – Dust Collection System (TP6)	lb/hr TPY	0.01 0.01	-	-	-	-	-
FUG 11	Fuel Crusher House – Dust Collection System (TP7)	lb/hr TPY	0.04 0.06	-	-	-	-	-
FUG 12	Fuel Silos – Dust Collection System (TP8)	lb/hr TPY	0.002 0.003	-	-	-	-	-
FUG 13	Limestone Transfer Tower – Conveyor C-9 to Conveyor C-10 (TP9)	lb/hr TPY	0.01 0.01	-	-	-	-	-
FUG 14	Limestone Silo and Crusher – Dust Collection System (TP10)	lb/hr TPY	0.02 0.02	-	-	-	-	-
FUG 15	Ash Silo – Dust Collection System (TP11)	lb/hr TPY	< 0.001 0.002	-	-	-	-	-
FUG 16	Ash Truck Loading (TP12)	lb/hr TPY	0.18 0.25	-	-	-	-	-
FUG 17	Lime Silo – Dust Collection System (TP13)	lb/hr TPY	0.22 0.01	-	-	-	-	-

†Applies only during the first 12 months of operation, unless otherwise noted.
*Applies when unit operates at less than 60 percent of its maximum heat input of 2,330 MMBTU/hr.
**Applies when unit operates at greater than or equal to 75 percent of rated load.
***All ppm(v) measurements are corrected to 15% oxygen.

2. Permittee shall fire only petroleum coke, coal, bagasse, and non-chemically treated wood in the CFB Boiler (EQT 1). Natural gas shall only be fired as a start-up fuel.

3. Permittee shall not fire non-chemically treated wood and/or bagasse in amounts that exceed ten (10) percent of the total fuel fired in the CFB Boiler (EQT 1). Permittee shall monitor the fuel firing rate of all fuels fired in this boiler. Keep records of the total amount of each type of fuel fired in this boiler each month, as well as the total amount of each type of fuel fired in this boiler for the last twelve months. Make records available for inspection by DEQ personnel.

4. Permittee shall ensure compliance with the opacity and particulate emission limits of this permit by visually inspecting the combustion turbine generating units (EQT 2 and EQT 3)

for visible emissions on a weekly basis. If visible emissions are detected, then, within three (3) working days, the permittee shall conduct a six minute opacity reading in accordance with EPA Reference Method 9. Records of visible emission checks shall include emission point ID, date visual check was performed, a record if visible emissions were detected, and a record of any Method 9 testing conducted and the results of any Method 9 test. These records shall be kept on site and made available for inspection by the Office of Environmental Compliance, Surveillance Division.

5. Permittee shall install, maintain, and calibrate a continuous emissions monitoring system (CEMS) to provide a continuous record for NOx for the combustion turbine generating units (EQT 2 and EQT 3). Monitoring records shall be kept on site and available for inspection by the Office of Environmental Compliance, Surveillance Division. Permittee shall calculate and record the total NOx emissions each month based on the CEMS reading, as well as for the last twelve consecutive months. These records shall be kept on site and made available for inspection by the Office of Environmental Compliance, Surveillance Division. NOx emissions above the maximum permitted limits for any twelve consecutive month period shall be a violation of this permit and must be reported to the Office of Environmental Compliance, Enforcement Division. A report showing the monthly total NOx emissions as well as the last twelve month cumulative totals shall be submitted to the Office of Environmental Compliance, Enforcement Division by February 15 for the preceding calendar year.

LOUISIANA AIR EMISSION PERMIT
GENERAL CONDITIONS

I. This permit is issued on the basis of the emissions reported in the application for approval of emissions and in no way guarantees that the design scheme presented will be capable of controlling the emissions to the type and quantities stated. Failure to install, properly operate and/or maintain all proposed control measures and/or equipment as specified in the application and supplemental information shall be considered a violation of the permit and LAC 33:III.501. If the emissions are determined to be greater than those allowed by the permit (e.g. during the shakedown period for new or modified equipment) or if proposed control measures and/or equipment are not installed or do not perform according to design efficiency, an application to modify the permit must be submitted. All terms and conditions of this permit shall remain in effect unless and until revised by the permitting authority.

II. The permittee is subject to all applicable provisions of the Louisiana Air Quality Regulations. Violation of the terms and conditions of the permit constitutes a violation of these regulations.

III. The Emission Rates for Criteria Pollutants, Emission Rates for TAP/HAP & Other Pollutants, and Specific Requirements sections or, where included, Emission Inventory Questionnaire sheets establish the emission limitations and are a part of the permit. Any operating limitations are noted in the Specific Requirements or, where included, Tables 2 and 3 of the permit. The synopsis is based on the application and Emission Inventory Questionnaire dated February 26, 2004, along with supplemental information dated May 24, 2006, July 13, 2006, September 22, 2006, October 4, 2006, and March 15, 2007.

IV. This permit shall become invalid, for the sources not constructed, if:

A. Construction is not commenced, or binding agreements or contractual obligations to undertake a program of construction of the project are not entered into, within two (2) years (18 months for PSD permits) after issuance of this permit, or;

B. If construction is discontinued for a period of two (2) years (18 months for PSD permits) or more.

The administrative authority may extend this time period upon a satisfactory showing that an extension is justified.

This provision does not apply to the time period between construction of the approved phases of a phased construction project. However, each phase must commence construction within two (2) years (18 months for PSD permits) of its projected and approved commencement date.

V. The permittee shall submit semiannual reports of progress outlining the status of construction, noting any design changes, modifications or alterations in the construction schedule which have or may have an effect on the emission rates or ambient air quality levels. These reports shall continue to be submitted until such time as construction is certified as being complete. Furthermore, for any significant change in the design, prior approval shall be obtained from the Office of Environmental Services, Air Permits Division.

VI. The permittee shall notify the Department of Environmental Quality, Office of Environmental Services, Air Permits Division within ten (10) calendar days from the date that construction is certified as complete and the estimated date of start-up of operation. The appropriate Regional Office shall also be so notified within the same time frame.

VII. Any emissions testing performed for purposes of demonstrating compliance with the limitations set forth in paragraph III shall be conducted in accordance with the methods described in the Specific Conditions and, where included, Tables 1, 2, 3, 4, and 5 of this permit. Any deviation from or modification of the methods used for testing shall have prior approval from the Office

of Environmental Assessment, Air Quality Assessment Division.

VIII. The emission testing described in paragraph VII above, or established in the specific conditions of this permit, shall be conducted within sixty (60) days after achieving normal production rate or after the end of the shakedown period, but in no event later than 180 days after initial start-up (or restart-up after modification). The Office of Environmental Assessment, Air Quality Assessment Division shall be notified at least (30) days prior to testing and shall be given the opportunity to conduct a pretest meeting and observe the emission testing. The test results shall be submitted to the Air Quality Assessment Division within sixty (60) days after the complete testing. As required by LAC 33:III.913, the permittee shall provide necessary sampling ports in stacks or ducts and such other safe and proper sampling and testing facilities for proper determination of the emission limits.

IX. The permittee shall, within 180 days after start-up and shakedown of each project or unit, report to the Office of Environmental Compliance, Enforcement Division any significant difference in operating emission rates as compared to those limitations specified in paragraph III. This report shall also include, but not be limited to, malfunctions and upsets. A permit modification shall be submitted, if necessary, as required in Condition I.

X. The permittee shall retain records of all information resulting from monitoring activities and information indicating operating parameters as specified in the specific conditions of this permit for a minimum of at least five (5) years.

XI. If for any reason the permittee does not comply with, or will not be able to comply with, the emission limitations specified in this permit, the permittee shall provide the Office of Environmental Compliance, Enforcement Division with a written report as specified below.

A. A written report shall be submitted within 7 days of any emission in excess of permit requirements by an amount greater than the Reportable Quantity established for that pollutant in LAC 33.I.Chapter 39.

B. A written report shall be submitted within 7 days of the initial occurrence of any emission in excess of permit requirements, regardless of the amount, where such emission occurs over a period of seven days or longer.

C. A written report shall be submitted quarterly to address all emission limitation exceedances not included in paragraphs A or B above. The schedule for submittal of quarterly reports shall be no later than the dates specified below for any emission limitation exceedances occurring during the corresponding specified calendar quarter:

1. Report by June 30 to cover January through March
2. Report by September 30 to cover April through June
3. Report by December 31 to cover July through September
4. Report by March 31 to cover October through December

D. Each report submitted in accordance with this condition shall contain the following information:

1. Description of noncomplying emission(s);
2. Cause of noncompliance;
3. Anticipated time the noncompliance is expected to continue, or if corrected, the duration of the period of noncompliance;
4. Steps taken by the permittee to reduce and eliminate the noncomplying emissions; and

5. Steps taken by the permittee to prevent recurrences of the noncomplying emissions.

E. Any written report submitted in advance of the timeframes specified above, in accordance with an applicable regulation, may serve to meet the reporting requirements of this condition provided all information specified above is included. For Part 70 sources, reports submitted in accordance with Part 70 General Condition R shall serve to meet the requirements of this condition provided all specified information is included. Reporting under this condition does not relieve the permittee from the reporting requirements of any applicable regulation, including LAC 33.I.Chapter 39, LAC 33.III.Chapter 9, and LAC 33.III.5107.

XII. Permittee shall allow the authorized officers and employees of the Department of Environmental Quality, at all reasonable times and upon presentation of identification, to:

A. Enter upon the permittee's premises where regulated facilities are located, regulated activities are conducted or where records required under this permit are kept;

B. Have access to and copy any records that are required to be kept under the terms and conditions of this permit, the Louisiana Air Quality Regulations, or the Act;

C. Inspect any facilities, equipment (including monitoring methods and an operation and maintenance inspection), or operations regulated under this permit; and

D. Sample or monitor, for the purpose of assuring compliance with this permit or as otherwise authorized by the Act or regulations adopted thereunder, any substances or parameters at any location.

XIII. If samples are taken under Section XII.D. above, the officer or employee obtaining such samples shall give the owner, operator or agent in charge a receipt describing the sample obtained. If requested prior to leaving the premises, a portion of each sample equal in volume or weight to the portion retained shall be given to the owner, operator or agent in charge. If an analysis is made of such samples, a copy of the analysis shall be furnished promptly to the owner, operator or agency in charge.

XIV. The permittee shall allow authorized officers and employees of the Department of Environmental Quality, upon presentation of identification, to enter upon the permittee's premises to investigate potential or alleged violations of the Act or the rules and regulations adopted thereunder. In such investigations, the permittee shall be notified at the time entrance is requested of the nature of the suspected violation. Inspections under this subsection shall be limited to the aspects of alleged violations. However, this shall not in any way preclude prosecution of all violations found.

XV. The permittee shall comply with the reporting requirements specified under LAC 33:III.919 as well as notification requirements specified under LAC 33:III.927.

XVI. In the event of any change in ownership of the source described in this permit, the permittee and the succeeding owner shall notify the Office of Environmental Services, Air Permits Division, within ninety (90) days after the event, to amend this permit.

XVII. Very small emissions to the air resulting from routine operations, that are predictable, expected, periodic, and quantifiable and that are submitted by the permitted facility and approved by the Air Permits Division are considered authorized discharges. Approved activities are noted in the General Condition XVII Activities List of this permit. To be approved as an authorized

discharge, these very small releases must:

1. Generally be less than 5 TPY
2. Be less than the minimum emission rate (MER)
3. Be scheduled daily, weekly, monthly, etc., or
4. Be necessary prior to plant startup or after shutdown [line or compressor pressuring/depressuring for example]

These releases are not included in the permit totals because they are small and will have an insignificant impact on air quality. This general condition does not authorize the maintenance of a nuisance, or a danger to public health and safety. The permitted facility must comply with all applicable requirements, including release reporting under LAC 33:I.3901.

XVIII. Provisions of this permit may be appealed in writing pursuant to La. R.S. 30:2024(A) within 30 days from receipt of the permit. Only those provisions specifically appealed will be suspended by a request for hearing, unless the secretary or the assistant secretary elects to suspend other provisions as well. Construction cannot proceed except as specifically approved by the secretary or assistant secretary. A request for hearing must be sent to the following:

Attention: Office of the Secretary, Legal Services Division
La. Dept. of Environmental Quality
Post Office Box 4302
Baton Rouge, Louisiana 70821-4302

XIX. Certain Part 70 general conditions may duplicate or conflict with state general conditions. To the extent that any Part 70 conditions conflict with state general conditions, then the Part 70 general conditions control. To the extent that any Part 70 general conditions duplicate any state general conditions, then such state and Part 70 provisions will be enforced as if there is only one condition rather than two conditions.

TABLE I: BACT COST SUMMARY

Big Cajun 1 Power Plant (Steam)
Agency Interest No.: 11917
Louisiana Generating, LLC
Jarreau, Pointe Coupee Parish, Louisiana

Control Alternatives		Availability/ Feasibility	Negative Impacts (a)	Control Efficiency	Emissions Reduction (TPY)	Capital Cost ($)	Annualized Cost ($)	Cost Effectiveness ($/ton)	Notes
	No control technologies were eliminated based on economic factors								

Notes: a) Negative impacts: 1) economic, 2) environmental, 3) energy, 4) safety

TABLE II
AIR QUALITY ANALYSIS SUMMARY

Big Cajun 1 Power Plant (Steam)
Agency Interest No.: 11917
Louisiana Generating, LLC
Jarreau, Pointe Coupee Parish, Louisiana

Pollutant	Averaging Period	Preliminary Screening Concentration ($\mu g/m^3$)	Level of Significant Impact ($\mu g/m^3$)	Significant Monitoring Concentration ($\mu g/m^3$)	Background ($\mu g/m^3$)	Maximum Modeled Concentration ($\mu g/m^3$)	Modeled + Background Concentration ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	Modeled PSD Increment Consumption ($\mu g/m^3$)	Allowable Class II PSD Increment ($\mu g/m^3$)
PM_{10}	24-hour	8.29	5	10	75	39.4	114.4	150	13.7	30
SO_2	3-hour	39.43	25	-	566.6	410.6	977.2	1300	142.3	512
	24-hour	11.65	5	13	172.9	122.3	295.2	365	40.6	91
	Annual	0.67	1	-	NR	NR	NR	80	NR	20
NO_X	Annual	0.38	1	14	NR	NR	NR	100	NR	25
CO	1-hour	46.66	2000	-	NR	NR	NR	40,000	NR	-
	8-hour	17.96	500	575	NR	NR	NR	10,000	NR	-

NR = Not required