BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED NEW CAIR SO_2, CAIR NO_X	)	
ANNUAL AND CAIR NO_X OZONE SEASON	)	R06-26
TRADING PROGRAMS, 35 ILL. ADM.	)	(Rulemaking- Air)
CODE 225, CONTROL OF EMISSIONS	)	
FROM LARGE COMBUSTION SOURCES,	)	
SUBPARTS A, C, D and E	)	

NOTICE OF FILING

To: See Attached Certificate of Service

PLEASE TAKE NOTICE that on November 10, 2006, we filed with the Clerk of the Illinois Pollution Control Board the attached Testimony of Jason M. Goodwin, a copy of which is attached hereto and hereby served upon you.

Sasha M. Reyes

Dated: November 10, 2006

Steven J. Murawski
Sasha M. Reyes
BAKER & MCKENZIE LLP
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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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FROM LARGE COMBUSTION SOURCES,	)	
SUBPARTS A, C, D and E	)	

TESTIMONY OF JASON M. GOODWIN

My name is Jason M. Goodwin and I am submitting comments in the above-cited rulemaking on behalf of Zion Energy LLC (Zion). Zion owns and operates a peaking power electric generating facility called the Zion Energy Center located at 5701 West 9th Street, Zion, Illinois (Facility). I appreciate the opportunity to provide these comments to the Illinois Environmental Protection Agency (Illinois EPA) and the Illinois Pollution Control Board (Board) as part of the state's proposal to develop and implement a state-based Clean Air Interstate Rule (CAIR), 35 IAC Part 225 (Proposed Rule).

BACKGROUND

I am the Director of Environmental, Health & Safety for Calpine Corporation's (Calpine) Eastern Power Region through its subsidiary Calpine Operating Services Company, Inc. (COSCI). In that position, I am responsible for the implementation and management of environmental, health and safety (EHS) programs for 28 power generating facilities in 15 states. I have more than 13 years of experience in developing and managing EHS compliance programs that support the needs of a large, geographically diverse operating fleet, new project and business development opportunities throughout the United States, and coordination of due diligence and acquisition activities on both the buyer's and seller's side. I have a significant amount of policy

and regulatory development experience on the state and federal levels largely focused on air quality issues, and I currently serve as Calpine's primary technical resource for federal air quality-related policy matters such as New Source Review, CAIR and similar national and multi-state regulatory programs.

My relationship with Zion and the Facility is through COSCI. Specifically, Zion holds a contract with COSCI for the provision of operations, maintenance and other related support services. This contract includes my EHS program development support, as well as my environmental policy development and guidance services.

The Facility (I.D. No. 0977200ABB) generates electricity using three 160 MW natural gas-fired turbines with distillate oil as back-up fuel (Turbines). It is a major source of carbon monoxide (CO) and nitrogen oxides (NO_x) for purposes of the Illinois Clean Air Act Permit Program (CAAPP) and therefore holds a CAAPP permit (No. 02120057). The Facility also holds an Acid Rain Permit (No. 55392) and is a budget source for purposes of the Illinois EPA's NO_x Trading Program.

The Turbines at the Facility were constructed between August 2001 and September 2003. All of the Turbines operate during peak electricity demand periods and are equipped, operated and maintained with low NO_x combustors for natural gas firing and water injection for oil firing.

COMMENTS ABOUT THE PROPOSED CAIR RULE

While Zion endorses many aspects of the Proposed Rule as discussed immediately below, it maintains serious concerns regarding certain provisions of the proposal that seem to ignore the Proposed Rule's unreasonable, inequitable and detrimental impacts and constraints on natural gas-fired simple-cycle combustion turbine generating units like Zion's, which are commonly used in peaking facilities throughout Illinois. *See* Illinois EPA Statement of Reasons, p. 25.

In particular, due to technical and operational limitations, large-frame simple cycle combustion turbines are precluded from making additional reductions in NO_x emissions. Therefore, such facilities face a substantial risk to their ability to consistently generate power during peak demand due to foreseeable unit curtailments and shutdowns if Illinois EPA reduces the overall NO_x allowance pool or otherwise retires NO_x allowances pursuant to the Proposed Rule. That is because supplemental NO_x reductions from the simple-cycle combustion turbine generating units will not be possible, the Proposed Rule limits NO_x emission allocations to natural gas fired units, and the number of remaining NO_x allowances available for purchase on the market (any time Illinois EPA reduces the NO_x allowance cap) will likely be severely limited and cost prohibitive.

Moreover, fuel weighting in favor of fossil fuels other than natural gas will unfairly make the cost of compliance with the Proposed Rule substantially more expensive on a cost per ton basis for sources like Zion, that have recently invested a significant amount of capital for agency-approved emissions control technology.

I. Positive Elements of the Proposed Rule

Zion supports specific elements of the Proposed Rule as more fully described below.

A. Cap and Trade Program

Zion supports the Illinois EPA's choice to propose and implement a cap and trade in its Proposed Rule. From Zion's perspective, a cap and trade program is better than establishing unit-specific emission limits for electric generating units (EGUs) because, if implemented properly, a cap and trade program offers regulated sources a more equitable, flexible and economically feasible way to achieve the state's emissions goals.

B. Annual Review and Redistribution of Allowances

Zion strongly supports the concept of annual review and redistribution of allowances in the years 2012 and beyond, as well as the concept of determining allocations three years in advance of the compliance year. Such a system appropriately takes into account changes in the makeup of the affected facility mix within the state, provides for the truest picture of market conditions and allows for timely incorporation of new sources that begin operation after the state's CAIR program is implemented. More specifically, frequent redistribution of the allowance pool provides for the highest level of consistency between actual operation of EGUs and the allocation of emission credits, and is the best and most accurate way to reflect the prevailing conditions of the power market. Furthermore, shorter delays between the time when allocations are calculated improves the linkage between the data used to apportion allowances and the expected compliance demands.

C. Initial Allocation Pool and Operating Baseline

Zion supports the idea of including all units operating prior to January 1, 2006 in the initial allocation pool. Zion also supports the option to consider less than five years of operating data when establishing the operating baseline. Zion believes that these two elements of the Proposed Rule will ensure that more units are allocated from the main pool at the start of the program, which will reduce the potential of diminished allocations for new sources with limited operating history that have to request allocations from a relatively small new source pool.

D. New Unit Set Aside (NUSA)

Zion supports the establishment of a 5% new unit set-aside (NUSA) pool in Phase 1 and Phase 2 of the Proposed Rule's implementation. More importantly, Zion approves of the exceptional process for integrating new units into the main allowance pool in an expedited

fashion. This process provides a clear recognition that companies employing new units have already made significant control investments that are much more substantial than control investments likely to be required of older existing units on a cost per ton basis. Furthermore, without including the Illinois EPA's proposed timely integration, the rule would require the newest and cleanest EGUs to inequitably divide a progressively smaller NUSA pool among an increasing number of EGUs over an extended period of time.

E. Allocation Baseline

Zion supports the incorporation of steam energy from certain Combined Heat and Power/cogeneration facilities (Cogens) when determining the allocation baselines. Cogens offer an efficient and environmentally benign way of providing both electrical and thermal energy to end users. Consequently, those units rightly should get credit for electrical output and thermal output. While such incorporation doesn't directly affect Zion because it doesn't own or operate such units at the Facility, it is still a good idea.

Cogeneration facilities are commonly based on combined-cycle combustion turbine generating technology. In general, a combined cycle system operates by harnessing the exhaust heat from combustion turbines, converting this heat into steam and then using it to generate electric power through a steam turbine. Instead of using all of the steam to generate electricity, cogeneration facilities operate somewhat differently by diverting some of the steam away from the steam turbine generator and providing it to industrial customers for use in other processes. Because cogenerators divert some of their steam away from the steam turbine generator, the electrical generating efficiency is somewhat less compared to a traditional combined-cycle plant. Zion believes that cogenerators should be rewarded, not penalized, for making beneficial use of this technology. Except for Illinois EPA's use of fuel-weighting to assign the steam energy

credit, a concept which Zion opposes, the Proposed Rule seems to properly recognize this concept.

II. Elements of the Proposed Rule that Require Reconsideration and Revision

Zion contends that the Illinois EPA and the Board should reconsider and revise certain portions of the Proposed Rule as described below.

A. Fuel Adjustment Factors

The Illinois EPA's proposed use of fuel adjustment factors to allocate NO_x emission allowances should be eliminated. Despite the Illinois EPA's reasons for proposing fuel adjustment factors, reduction of allocations based on fuel type creates an artificial signal that shields the true cost of emission reductions from sources that have the largest proportion of emissions. TSD, Section 9.2.1; Hearing Transcript, October 11, 2006 (Morning), 127:15 – 130:8. By reducing the number of issued allowances to facilities that generate power with cleaner burning fuels (such as natural gas), fuel adjustment factors effectively require those facilities to meet emission limits that are more stringent than those faced by coal-fired facilities. Elimination of fuel adjustment factors will provide a more equitable distribution of NO_x allowances, allow affected sources to meet the same standard, and avoid artificial influences that would distort the cost of compliance. *See also* Illinois EPA Exhibit 16, p. 5 (STAPPA/ALAPCO endorsement of fuel neutral allocation).

While it is true that the model federal CAIR rule includes fuel weighting provisions similar to the ones proposed by the Illinois EPA, those fuel weighting provisions are not mandatory. *See* 40 CFR §51.123; Illinois EPA Statement of Reasons, p. 30. In fact, the U.S. EPA states that "[f]or NO_x allowances, each state has the flexibility to allocate its allowances however they choose, so long as certain timing requirements are met." 70 Fed. Reg. 25162,

25278 (May 12, 2005). "States also have discretion in determining their CAIR NOx allowance allocation methodology, as long as they demonstrate they will meet their budget." Illinois EPA Statement of Reasons, p. 31; *see also id.* at 32-33; TSD, p. 11. Such differences between the federal rule and state rules in allowance allocation methodologies for NO_x allowances "are possible without jeopardizing the environmental and other goals of the [CAIR] program." 70 Fed. Reg. at 25278.

Because of the unique nature of Illinois' EGU inventory subject to the CAIR, Illinois should utilize the flexibility afforded in the federal CAIR rule by eliminating fuel weighting in the state CAIR rule. Peaking combustion turbine units, which comprise the majority of gas-fired units affected by CAIR in Illinois, stand to be particularly impacted by fuel-weighting because they already operate with lower efficiencies that are common to simple-cycle combustion turbines. While fuel weighting seems to equalize certain considerations, including baseline emission rates and generating efficiencies, it does not equally apply to peaking combustion turbine units. Specifically, combined cycle facilities have better efficiencies and lower emission rates when compared to peakers. Consequently, the fuel weighting issue does not have as devastating an impact on those combined cycle sources. However, when fuel weighting is applied to peakers, the result is much more punitive.

First, as the NO_x emission allowances are currently proposed, peaking combustion turbine units will barely receive enough allowances to cover expected emissions. That limitation is a curious message to send to the newest and cleanest facilities, especially since most peakers have been constructed in the last 5-10 years and therefore possess best available control technology (BACT) emission controls.

Next, unlike combined-cycle generating facilities, large-frame simple-cycle turbines are unable to feasibly install and utilize post-combustion NO_x controls to reduce emissions to levels below those achievable by advanced combustion controls. The primary reason for this limitation is the fact that selective catalytic reduction (SCR), which is the most common, effective and feasible post-combustion control technology available for combustion sources, depends on a chemical reaction to reduce NO_x emissions. Specifically, a reagent – typically ammonia or urea – is injected into the combustion exhaust stream, upstream of a catalyst bed. The catalyst accelerates and promotes the conversion of NO_x to water, nitrogen and a limited amount of unreacted reagent. A key factor in this reaction is temperature – SCR is generally effective when the exhaust temperature is in the range of 600 to 800 degrees Fahrenheit. Temperatures below or above this temperature range substantially reduce the effectiveness of SCR in reducing NO_x emissions.

While SCR is highly effective and commonly used in combined-cycle applications, high exhaust temperatures associated with large-frame combustion turbines render SCR mostly ineffective. The large-frame turbines, in particular the "F-class" turbines that are commonly used in peaking plants such as the units at the Zion facility, exhibit exhaust temperatures in the 1,150 to 1,200 degree range. Although some catalyst manufacturers claim to have developed high-temperature catalysts that are effective at higher exhaust temperatures, no such application has been demonstrated in practice on an F-class combustion turbine. Research of the U.S. EPA's RACT/BACT/LAER Clearinghouse Database shows that as recently as 2000, lowest achievable emission rate (LAER) determinations had been issued for facilities similar to Zion's (i.e., Rock Springs 680 Megawatt power station in Cecil County, Maryland) confirming that post-combustion controls for F-class combustion turbines operating in simple-cycle configuration

remain technically infeasible. See Attachment 1. A more recent BACT determination was issued to Louisville Gas & Electric Company (LG&E) in June 2003 for a simple-cycle generating facility that proposed the same combustion turbine model as that used to generate power at the Zion facility. As in the case of the Rock Springs facility referenced above, combustion controls were approved as BACT for the LG&E peaking facility, and post-combustion controls were deemed to be infeasible. See Attachment 2. Similarly, when considering all of the peaker projects constructed in Illinois over the last ten years, the Illinois EPA has determined that combustion controls – and not post combustion control measures – represented BACT in every case. Other post-combustion control techniques, such as selective non-catalytic reduction (SNCR), require exhaust temperatures in the range of 1,600 to 2,000 degrees Fahrenheit, a characteristic that is not achievable by F-class combustion turbines.

Finally, Illinois previously faced the opportunity to include fuel weighting allocations under the NO_x SIP Call and, after an intensive stakeholder process, chose not to incorporate such fuel weighting into the state-based rule. Therefore, it's puzzling why the Illinois EPA has proposed to offer fuel weighting in its Proposed Rule since most of the same stakeholders are directly affected. From Zion's perspective, the Illinois EPA's NO_x SIP Call regulation operated very well on a fuel neutral basis. Consequently, when considering the basis for Illinois EPA's previous choice to reject fuel weighted allocations as well as the relative success of the Illinois's ability to reasonably regulate NO_x sources under that rule, Zion fails to see any compelling reason why fuel-weighting should be introduced or approved at this time.

B. Clean Air Set Aside (CASA)

Zion opposes Illinois EPA's proposed set-aside of 25 percent of the NO_x emission allocation pool for projects related to Energy Efficiency/Renewable Energy (12%), Clean

Technology (11%) and Early Adopters (2%) based on the full extent of that proposed set-aside and the specific nature of the projects included within that set-aside pool. As we understand it, the proposed CASA would include allocations for demand-side projects, zero and low emission projects, energy efficiency projects, and early reduction credits.

Zion is not opposed to the Illinois EPA's establishment of a reasonable and lower percentage NO_x emission allocation set-aside pool for certain renewable energy projects. However, such lower level set-asides for renewable energy projects should provide some encouragement to Illinois' regulated community, it should not supplant the potential need to establish a separate renewable energy regulatory program or detrimentally affect the ability of certain regulated EGUs (e.g., peakers) to comply with the state's ultimate CAIR rule.

The Illinois EPA should completely eliminate the other proposed projects included within the categories of Energy Efficiency/Renewable Energy, Clean Technology and Early Adopters because, inter alia, they will impose artificial influences on the cost of compliance that will unreasonably drive costs upward for Zion, similar gas-fired EGUs throughout the state and, ultimately, energy customers. Specifically, the Illinois EPA's proposal will further remove available NO_x emission allowances from the overall pool that could otherwise have been used by regulated EGUs that are not coal-fired. It is unclear why the Illinois EPA feels the need to create such incentives or rewards for those sources since most coal-fired EGUs have already installed or will soon install NO_x controls on much of their affected fleet to comply with the NO_x SIP Call/ NO_x Trading Program. Therefore, the Illinois EPA seems to have proposed a rule that will incentivize and reward sources for projects and reductions that are already required by law to the clear detriment of other types of EGUs in the state.

Furthermore, Zion does not concur with the Illinois EPA's proposal to carry-over unused "special project" pool allowances to supplement those pools in the future. Instead, if "special project" pool allowances are ultimately included in the final CAIR rule, the unused "special project" allowances should be redistributed to the main source pool for allocation to main pool EGUs.

Finally, when the full extent of the proposed set asides is combined with the fuel weighting impacts on peakers and the complete retirement of the Compliance Supplement Pool, peakers will have no options to comply aside from buying allowances from other sources to which Illinois EPA has granted a variety of compliance options under the Proposed Rule. Illinois should not propose, and the Board should not approve, a rule that would place such a substantial constraint on a particular group of Illinois sources' ability to comply with the Proposed Rule and potential future contingencies (e.g., reduced state-level emission caps and the resulting diminishment of source-specific allocations). Approval of such a rule would clearly impose a substantial economic burden on those particular sources to maintain compliance. These burdensome costs were clearly not considered in Illinois EPA's economic reasonableness justification for the Proposed Rule, but should have been. See TSD, Sections 7.0 and 8.1.5.6.

C. Overall Negative Impact on Gas-Fired Peaker Units

As discussed above, natural gas-fired peaker units make up the majority of gas-fired generating units in Illinois. Because of the technological limitations available to peakers, the Proposed Rule effectively focuses the incremental cost of control on that portion of the affected source community that is least able to respond. As their name implies, peakers operate when electric power demand is at its highest; correspondingly, peakers also operate to provide power when demand nears the limits of supply, which results in an increase in the cost of power

production. For peakers that face allowance shortfalls, the cost of a potentially diminishing pool of available NO_x allowances will be magnified as owners of peakers will be forced to purchase allowances from the open emission commodity market, curtail operations in order to stay within allotted limits, or shutdown particular sources when the economics of operating them is no longer feasible.

If these sources are forced to purchase allowances, it is important to note that the cost of such purchases likely will be reflected as increased electric power prices to consumers. When combined with the significant reduction of 25% of the overall NO_x emission allocation pool for "special projects" (i.e., CASA) and the complete retirement of the Compliance Supplement Pool, the state has created a situation that foreseeably (and unreasonably) could drive peak power prices upward even further. This increased cost should be considered by the Illinois EPA in its development and final implementation of a more equitable final CAIR rule because, as the Illinois EPA knows, the ability to provide seamless power during peak electrical demands necessitates the ability to operate natural gas-fired peakers at a reasonable cost to consumers.

Finally, the undue burden placed upon natural gas fired peakers seems to contradict the Illinois EPA's "good environmental policy to provide more allowances to sources that operate more efficiently, install air pollution control equipment, and upgrade their equipment." Illinois EPA Statement of Reasons, p. 35. Moreover, the above-described potential for increased costs for peakers and electricity customers seem to have been excluded from the Integrated Planning Model used by the Illinois EPA to evaluate the economic impact of the CASA. See Illinois EPA TSD, Section 7.0. Thus, the true estimated economic impact of those costs on all of Illinois' EGUs, and in particular peakers, and their customers has not entirely been presented to the Board to date, but should be prior to any final enactment of the CAIR.

Conclusion

For the above-described reasons, Zion requests that Illinois Environmental Protection Agency revise the Proposed Rule as described above. Furthermore, Zion asks that the Pollution Control Board adopt a rule that reasonably incorporates Zion's comments.

ATTACHMENT 1

U.S. Environmental Protection Agency

Technology Transfer Network
Clean Air Technology Center
RACT/BACT/LAER Clearinghouse

To learn more about the processes associated with this facility, click the Process List button.

You can then view pollutant information for each process.

RBLC Home | New Search | Search Results | Facility Information | Process List

Facility Information

Help

Date Entered: 12/30/2004

Date Last Modified: 03/01/2005

FINAL

RBLC ID: MD-0034
Corporate/Company: OLD DOMINION ELECTRIC COOPERATIVE
Facility Name: ROCK SPRINGS
Facility Description: PROJECT INCLUDES 6 GE 7FA SIMPLE CYCLE COMBUSTION TURBINES RATED 190 MW EACH

State: MD
County: CECIL
EPA Region: 3
Zip Code: 21911

Facility Contact Information:

Name: DAVID SMITH

Phone: 8049684045 **E-Mail:** DSMITH@ODEC.COM

Agency Contact Information:

Agency: MD999 - MARYLAND, OTHER
Contact:
Address:
, MD
Phone:
Other Agency Contact Info:

Permit Number: CPCN CASE NO. 8821

Permit Type:

EST/ACT DATE
Application Accepted Date: 08/09/1999
Permit Date: EST 11/30/2000
FRS Number: 110012274797
SIC: 4911
NAICS: 221112

Affected Class I / U.S. Border Area:

No affected Class 1 areas identified.

Facility-Wide Emission Increase/Decrease:
(After prevention/control measures)

No facilitywide emissions data available for this facility.

Other Permitting Information:

4 OUT OF 6 CT OPERATIONAL AS OF 8/04

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Last updated on: Friday, April 21, 2006.
URL: http://cfpub.epa.gov/rblc/cfm/facdetl.cfm

U.S. Environmental Protection Agency

Technology Transfer Network
Clean Air Technology Center
RACT/BACT/LAER Clearinghouse

Process Information - List of Processes

Help

FINAL

RBLC ID: MD-0034
Corporate/Company: OLD DOMINION ELECTRIC COOPERATIVE
Facility Name: ROCK SPRINGS

Process Code	Process	Throughput Capacity
15.110	(6) SIMPLE CYCLE GAS COMBUSTION TURBINE	190.00 MW EACH
19.600	NATURAL GAS FIRED HEATER	9.00 MMBTU/H
17.210	EMERGENCY DIESEL FIREWATER PUMP	200.00 HP

U.S. Environmental Protection Agency

Technology Transfer Network
Clean Air Technology Center
RACT/BACT/LAER Clearinghouse

Process Information - Details

Help

FINAL

RBLC ID: MD-0034
Corporate/Company: OLD DOMINION ELECTRIC COOPERATIVE
Facility Name: ROCK SPRINGS
Process: (6) SIMPLE CYCLE GAS COMBUSTION TURBINE

Primary Fuel: NATURAL GAS
Throughput: 190.00 MW EACH
Process Code: 15.110

Pollutant Information - List of Pollutants

Help

Pollutant	Primary Emission Limit	Basis	Verified
Particulate Matter < 10 µ (PM10)	31.2000 LB/H	BACT-PSD	UNKNOWN
Nitrogen Oxides	9 PPMVD		

(NOx)	@15% O2	LAER	UNKNOWN
Sulfur Oxides (SOx)		N/A	UNKNOWN
Volatile Organic Compounds (VOC)		N/A	UNKNOWN
Carbon Monoxide	9 PPMVD @ 15% O2	BACT-PSD	UNKNOWN

Process Notes: CAPACITY RATING @ MAXIMUM LOAD AT ZERO DEGREES F

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Last updated on: Tuesday, September 12, 2006.
URL: http://cfpub.epa.gov/rblc/cfm/ProcDetl.cfm

ATTACHMENT 2

U.S. Environmental Protection Agency

Technology Transfer Network
Clean Air Technology Center
RACT/BACT/LAER Clearinghouse

To learn more about the processes associated with this facility, click the Process List button.

You can then view pollutant information for each process.

RBLC Home | New Search | Search Results | Facility Information | Process List

Facility Information

Help

Date Entered: 03/24/2005

Date Last Modified: 03/30/2005

FINAL

RBLC ID: KY-0093
Corporate/Company: LOUISVILLE GAS AND ELECTRIC COMPANY
Facility Name: LOUISVILLE GAS AND ELECTRIC COMPANY
Facility Description: EXISTING SOURCE WITH COAL AND NATURAL GAS FIRED PEAKING UNITS.

State: KY
County: TRIMBLE
EPA Region: 4
Zip Code: 40232

Facility Contact Information:

Name:
Phone:
E-Mail:

Agency Contact Information:

Agency: KY001 - KENTUCKY DEP, DIV FOR AIR QUALITY
Contact: MR. TOM ADAMS
Address: ENVIRONMENTAL & PUBLIC PROT. CABINET
DEPT. OF ENV. PROT. DIV. OF AIR QUALITY
803 SCHENKEL LANE
FRANKFORT, KY 40601
Phone: (502)573-3382
Other Agency Contact Info: REVIEWED BY BEN MARKIN

Permit Number: V-02-043
Permit Type: C: MODIFY EXISTING PROCESS AT EXISTING FACILITY

EST/ACT DATE
Application Accepted Date: ACT 12/19/2002
Permit Date: ACT 06/06/2003
FRS Number: 110017426999
SIC: 4911
NAICS: 221112

Affected Class I / U.S. Border Area:

No affected Class 1 areas identified.

Facility-Wide Emission Increase/Decrease:
(After prevention/control measures)

Pollutant	Increase (+)/Decrease (-), Tons/Year
Particulate Matter (PM)	499.3000
Sulfur Oxides (SOx)	105.1000
Volatile Organic Compounds (VOC)	73.6000

Carbon Monoxide	762.0000
Nitrogen Oxides (NOx)	1524.0000

Other Permitting Information:

FACILITYWIDE EMISSIONS ARE TOTAL PROPOSED POTENTIAL EMISSIONS DUE TO 8760 HOURS PER OPERATION FOR ALL 6 TURBINES. THIS PROJECT WILL ADD 5 GE PG7241 (FA) NATURAL GAS SIMPLE CYCLE TURBINES, WITH A NOMINAL CAPACITY OF 160 MW EACH.

U.S. Environmental Protection Agency

Technology Transfer Network
Clean Air Technology Center
RACT/BACT/LAER Clearinghouse

Process Information - List of Processes

Help

FINAL

RBLC ID: KY-0093
Corporate/Company: LOUISVILLE GAS AND ELECTRIC COMPANY
Facility Name: LOUISVILLE GAS AND ELECTRIC COMPANY

Process Code	Process	Throughput Capacity
15.110	TURBINE, SIMPLE CYCLE, NATURAL GAS (6)	160.00 MW

U.S. Environmental Protection Agency

Technology Transfer Network
Clean Air Technology Center
RACT/BACT/LAER Clearinghouse

Process Information - Details

Help

FINAL

RBLC ID: KY-0093
Corporate/Company: LOUISVILLE GAS AND ELECTRIC COMPANY
Facility Name: LOUISVILLE GAS AND ELECTRIC COMPANY
Process: TURBINE, SIMPLE CYCLE, NATURAL GAS (6)

Primary Fuel: NATURAL GAS
Throughput: 160.00 MW
Process Code: 15.110

Pollutant Information - List of Pollutants

Help

Pollutant	Primary Emission Limit	Basis	Verified
Nitrogen Oxides (NOx)	12 PPM @ 15% O2	BACT-PSD	UNKNOWN
Sulfur Oxides (SOx)		BACT-PSD	UNKNOWN

Carbon Monoxide	9 PPM @ 15% O2	BACT-PSD	UNKNOWN
Particulate Matter (PM)	19 LB/H	BACT-PSD	UNKNOWN

Process Notes: UNITS ARE GE PG7241(FA) PEAKING UNITS. ADDITIONAL THROUGHPUT: 1763 MMBTU/HR MAXIMUM RATED HEAT INPUT CAPACITY (@ -10 DEGREES F),

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Last updated on: Tuesday, September 12, 2006.
URL: http://cfpub.epa.gov/rblc/cfm/ProcDetl.cfm

CERTIFICATE OF SERVICE

The undersigned certifies that a copy of the foregoing Testimony of Jason M. Goodwin was served on this 10th day of November, 2006,

Upon the following electronically:

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