# BEFORE THE ILLINOIS POLLUTION CONTROL BOARDECEIVED

CLERK'S OFFICE

IN THE MATTER OF THE PROPOSAL OF: ) CENTRAL ILLINOIS LIGHT COMPANY ) FOR A SITE SPECIFIC RULEMAKING ) AMENDING 35 ILL. ADM. CODE § 214.561. ) OCT 1 1 2002 R 02-21 STATE OF ILLINOIS Pollution Control Board (Site Specific Rulemaking)

#### **NOTICE OF FILING**

TO:

<u>Via Federal Express</u> Dorothy M. Gunn, Clerk Illinois Pollution Control Board James R. Thompson Center 100 West Randolph, Suite 11-500 Chicago, IL 60601-3218

<u>Via Federal Express</u> John Knittle, Hearing Officer Illinois Pollution Control Board 1717 Philo Road, Suite 25 Urbana, IL 61802 <u>Via Federal Express</u> Rachel L. Doctors Assistant Counsel Division of Legal Counsel Illinois Environmental Protection Agency 1021 North Grand Avenue East P. O. Box 19276 Springfield, IL 62794-9276

PLEASE TAKE NOTICE that on this 10<sup>th</sup> day of October, 2002, Petitioner, Central Illinois Light Company, filed an original and nine (9) copies of the attached Testimony of Sandy Isbell and Testimony of Mark Davis, a copy of each of which is herewith served upon you.

Diana M. Jagiella

Jon S. Faletto Diana M. Jagiella Howard & Howard Attorneys, P.C. 211 Fulton Street, Suite 600 Peoria, IL 61602-1350 (309) 672-1483

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# IN THE MATTER OF THE PROPOSAL OF: CENTRAL ILLINOIS LIGHT COMPANY FOR A SITE SPECIFIC RULEMAKING AMENDING 35 ILL. ADM. CODE § 214.561.

R 02-21

OCT 1 1 2002

STATE OF ILLINOIS (Site Specific Rulemaking)

Testimony of Sandy Isbell Central Illinois Light Company

October 11, 2002

## WRITTEN TESTIMONY OF SANDY ISBELL

This testimony is submitted pursuant to 35 Ill. Adm. Code § 103.205 and the August 21, 2002 Hearing Officer Order entered in this matter. I, Sandy Isbell, being duly sworn upon oath, state as follows:

#### **Professional Experience and Employment**

My name is Sandy Isbell and my business address is 300 Liberty Street, Peoria, Illinois 61602. I have been employed by the Central Illinois Light Company ("CILCO") for twenty-four (24) years.

I began my employment with CILCO in the Marketing Department. I subsequently held positions as Traffic Administrator, Senior Fuel Administrator, and Fuel Analyst. I am currently Fuel Analyst/Safety for E.D. Edwards Station (hereafter "Edwards Station" or "Edwards"). I report to Ron Markel, Material Handling Team Leader. My primary responsibilities are to procure all energy producing fuels (excluding natural gas) and the transportation of these fuels for Edwards Station. I have worked in the fuels area for over seventeen (17) years.

CILCO's fuel costs have been significantly lower as a result of the variance relief granted by the Pollution Control Board in 1999. CILCO's fuel costs will continue to be significantly lower if the relief is granted on a permanent basis.

#### Cost Savings Associated with Variance Operational Flexibility

Prior to the variance, to maintain compliance with the 1.8 lb/mmBtu limit applicable to Boiler No. 2, CILCO historically purchased expensive, low-sulfur coal. The variance relief provided CILCO the flexibility to utilize blended coal and/or midrange sulfur coals in Boiler No. 2. This flexibility resulted in fuel cost savings and

promotes purchase and use of Illinois coal. Based on spot market prices, CILCO saves a minimum of \$3 million annually through lower fuel costs. Even using very conservative estimates of fuel cost savings based on historical and potential contract prices, CILCO saves a minimum of \$1,298,111 annually. CILCO also combusts coal from the Exxon Mine in Illinois. Absent the variance relief, CILCO would not be able to purchase this Illinois coal.

CILCO also saves "administrative" costs as a result of the variance relief. In addition to the actual fuel cost penalty in burning only low-sulfur coal in Boiler No. 2, there are increased ancillary costs associated with exclusive use of low-sulfur coal in Boiler No. 2. These ancillary costs include higher operating costs due to the need to maintain separate coal stockpiles for only low-sulfur coal (active and reserve), and the costs of separate coal handling equipment for the low-sulfur coal. In addition, there are increased costs associated with negotiating and monitoring coal supply and transportation contracts for the low-sulfur coal.

CILCO also saves money through greater use of Boiler No. 2 which is a more efficient boiler. The 1998 net heat rates for the three boilers are:

 Boiler No. 1 =
 10,643 Btu/kwh

 Boiler No. 2 =
 9,806 Btu/kwh

 Boiler No. 3 =
 9,862 Btu/kwh

The lower the heat rate, the more efficient the boiler. This means it takes less coal in a more efficient boiler to produce the same kilowatt hours in a less efficient boiler. While the difference in heat rate between the three boilers may seem small, on an annualized basis, Boiler No. 2's lower heat rate translates into significant savings. For example, producing  $1.25 \times 10^9$  kilowatt hours in each boiler would require:

608,421 tons of coal in Boiler No. 1 560,573 tons of coal in Boiler No. 2 563,775 tons of coal in Boiler No. 3

Thus, producing the same amount of energy requires 47,848 more tons of coal in Boiler No. 1 than in Boiler No. 2, and 3,202 more tons of coal in Boiler No. 3 than in Boiler No. 2. Assuming the same type of coal was burned in each boiler at \$28.00 per ton, the savings from using Boiler No. 2 over Boiler No. 3 would be \$89,656. The savings from using Boiler No. 2 over Boiler No. 1 would be \$1,339,744.

The benefits of using a more efficient boiler can also be illustrated by looking at the kilowatt hours produced in each boiler from the same amount of coal. Boiler No. 2 will produce more kilowatt hours than Boiler No. 1 or 3 from the same amount and heating value of coal, i.e. 10,900 Btu/lb. On an annual basis, Boiler No. 2 can produce significantly more kilowatt hours from the same amount of coal.

For example, combusting 1 million tons of the same coal in each boiler would produce the following kilowatt hours:

Boiler No. 1 $2.05 \times 10^9$  kwhBoiler No. 2 $2.23 \times 10^9$  kwhBoiler No. 3 $2.21 \times 10^9$  kwh

Thus, the use of the more efficient Boiler No. 2 would produce  $12.6 \times 10^5$  (i.e. 12.6 million kilowatt hours) more kilowatt hours from the same amount of coal than Boiler No. 3.

Prior to the variance, Boiler No. 2 had the highest generating cost because of the higher cost for low-sulfur coal needed to meet the 1.8 lb/mmBtu/hr SO2 emission limit.

#### **Coal Cost Savings Associated with Operational Flexibility**

References in my testimony to the term "low-sulfur coal" means coal with a sulfur content low enough to ensure compliance with the 1.8 lb/mmBtu SO<sub>2</sub> emission limit of § 214.141 which applied to Boiler No. 2 before issuance of the variance.

The cost and availability of low-sulfur coal is critical to development of Fuel/SO<sub>2</sub> Emission strategies. The cost of low-sulfur coal is traditionally quite high, exceeding \$26 per ton prior to transportation. CILCO historically purchased low-sulfur coal for Boiler No. 2 from the Rend Lake Coal Mine in Southern Illinois to ensure compliance with the 1.8 lb/mmBtu SO<sub>2</sub> emission limit under § 214.141. Rend Lake low-sulfur coal has not been available since the year 2000. Since this occurred, CILCO has been unable to purchase low-sulfur Illinois coal. Due to its higher sulfur content, Illinois coal currently available in the marketplace cannot be combusted in Boiler No. 2 in compliance with the 1.8 lb/mmBtu SO<sub>2</sub> emission limit imposed by § 214.141. As a result, low-sulfur coal requirements would have to be met from coal sources outside of Illinois.

Although low-sulfur coal is available in several U.S. locations, due to freight costs and combustion characteristics, it is currently only economically feasible for CILCO to purchase low-sulfur coal from Southern Indiana. Based on my research, if the variance were not in place, CILCO would currently pay approximately \$26.49 per ton for this coal and an additional \$9.56 per ton for transportation for a total delivered cost of \$36.05 per ton.

Based on the variance, CILCO has effectively pursued fuel strategy scenarios that allow CILCO to achieve significant fuel cost savings by blending various coals along with the purchase of  $SO_2$  allowances as needed. In 2001, CILCO implemented the following fuel strategy:

BOILER	2001 FUEL STRATEGY
Boiler No. 1	Blend of: 80% Consol Rend Lake coal (sulfur content of 2.4 lb/mmBtu) and 20% Exxon Monterey coal (sulfur content of 1.77 lb/mmBtu).
Boiler No. 2	Blend of: 50% Consol Rend Lake coal and 50% Exxon Monterey coal.
Boiler No. 3	Blend of: 80% Consol Rend Lake coal and 20% Turris Elkhart coal (sulfur content of 5.6 lb/mmBtu). In May 2001 this fuel source was switched to a blend of 75% Consol Rend Lake coal and 25% Exxon Monterey coal.

In 2001, the spot market cost for low-sulfur coal ranged from approximately \$25.65/ton to \$73.96/ton.

In 2002, CILCO has obtained coal from four sources. These fuel sources guarantee by contract to provide coal with sulfur content ranging from 1.2 lb/mm/Btu to 5.9 lb/mm/Btu. The majority of coal purchased by CILCO in 2002 has contained a sulfur content averaging greater than 1.91 lb/mmBtu. The average cost for these coals ranges from \$25.65/ton to \$43.07/ton.

	In	2002,	CILCO	has im	plemented	the foll	lowing f	uel strategy:
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BOILER	2001 FUEL STRATEGY
Boiler No. 1	First quarter tried 100% Colorado coal (sulfur content of 1.2 lb/mmBtu). Subsequently tried 100% Wabash coal (sulfur content of 2.8 lb/mmBtu). Effective 0/1/02 100% Turris coal (sulfur content of 5.9 lb/mmBtu.)
Boiler No. 2	Blend of: 60% Colorado coal (1.2 lb/mmBtu) and 40% Exxon Monterey coal <sup>1</sup> (sulfur content of 1.77 lb/mmBtu) Effective 9/02 Blend of: 60% Wabash coal (sulfur content 2.8 lb/mmBtu) and 40% Exxon Monterey coal (sulfur content of 1.77 lb/mmBtu.)
Boiler No. 3	Blend of: 60% Colorado coal (sulfur content 1.2 lb/mmBtu) and 40% Exxon Monterey coal (sulfur content of 1.77 lb/mmBtu.)

<sup>&</sup>lt;sup>1</sup> It should be noted that Exxon cannot guarantee 1.77 lb/mmBtu. Thus, this coal supply is not considered coal that would comply with the 1.8 lb/mmBtu  $SO_2$  limit of § 214.141.

During 2002, the spot market cost for low-sulfur coal ranged from \$45.69/ton to \$52.06/ton.

Without the variance, CILCO would not have been able to burn the Exxon or higher sulfur coal.

I prepared the charts below which illustrate the minimum fuel cost savings associated with the relief. The figures in the chart are based on:

An assumed annual purchase of 294,000 tons of coal; and

• Per ton coal costs based on actual prices currently paid by CILCO and per ton estimated contract prices for the closest source of low-sulfur coal in Southern Indiana.

Based on this comparison, it costs CILCO a minimum of \$1,298,111 more annually to fuel Boiler No. 2 with low-sulfur coal than it does to fuel Boiler No. 2 with blended coal.

Coal Type	Cost Per Ton (including 6¼% tax and freight)	Total Annual Fuel Costs	Excess Fuel Costs
Illinois Mid Sulfur (Exxon)	\$25.30	\$7,455,328	N/A
Indiana Low Sulfur (1.2%)	\$36.05	\$8,753,439	\$1,298,111

These savings are even more dramatic when compared to other sources of lowsulfur coal as illustrated in the chart below.

Coal Type	Cost Per Ton (including 6¼% tax and freight)	Total Annual Fuel Costs	Excess Fuel Costs
Central Appalachian (1.2 lb/mmBtu)	\$47.02	\$11,417,107	\$3,961,779
Colorado (1.2 lb/mmBtu)	\$38.06	\$10,501,699	\$3,046,371

This fuel cost illustration is based on published spot market price for the Central Appalachian coal and my knowledge regarding contract pricing for the Colorado coal at the time it was available.

The Illinois Environmental Protection Agency (IEPA) has historically estimated the potential cost savings in the range of \$1.5 million. The cost savings estimates by CILCO and IEPA which rely on various published prices are both reasonable approaches. However, based on the actual coal prices CILCO has been able to negotiate in the past and the contract fuel cost CILCO expects to negotiate, the actual coal cost savings will be between a minimum of \$1,298,111 up to \$3 million.

I am responsible for providing fuel cost information for development of an Acid Rain strategy for compliance with the Federal Clean Air Act. CILCO's Edwards Station is currently allotted 22,273 SO<sub>2</sub> allowances annually. The cost for additional allowances has ranged from \$116.00 to \$220.00 since January 1, 2000.

As illustrated, to date it has been cheaper to buy  $SO_2$  allowances and operate under the terms of the variance relief than to purchase low-sulfur coal. Low-sulfur coal is currently very expensive and supplies are limited. Unless low-sulfur coal becomes available in Illinois in reliable quantities and quality and at a cost-effective price, which is unlikely, it will continue to be more cost effective to purchase  $SO_2$  allowances and operate Edwards Station in compliance with the  $SO_2$  emission limits established by the variance.

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#### BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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IN THE MATTER OF THE PROPOSAL OF: CENTRAL ILLINOIS LIGHT COMPANY FOR A SITE SPECIFIC RULEMAKING AMENDING 35 ILL. ADM. CODE § 214.561.

R 02-21

(Site Specific Rulemaking)

#### **CERTIFICATE OF SERVICE**

I, the undersigned, hereby certify that I have served the attached Testimony of Sandy Isbell upon the following persons:

<u>Via Federal Express</u> Dorothy M. Gunn, Clerk Illinois Pollution Control Board James R. Thompson Center 100 West Randolph, Suite 11-500 Chicago, IL 60601-3218

<u>Via Federal Express</u> John Knittle, Hearing Officer Illinois Pollution Control Board 1717 Philo Road, Suite 25 Urbana, IL 61802

Dated: October 10, 2002

Jon S. Faletto Diana M. Jagiella Howard & Howard Attorneys, P.C. 211 Fulton Street, Suite 600 Peoria, IL 61602-1350 (309) 672-1483

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<u>Via Federal Express</u> Rachel L. Doctors Assistant Counsel Division of Legal Counsel Illinois Environmental Protection Agency 1021 North Grand Avenue East P. O. Box 19276 Springfield, IL 62794-9276

Diana M. Jagiella

#### THIS FILING IS SUBMITTED ON RECYCLED PAPER

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R 02-21

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STATE OF ILLINOIS (Site Specific Rulemating)on Control Board

Testimony of Mark Davis Central Illinois Light Company

October 11, 2002

#### WRITTEN TESTIMONY OF MARK DAVIS

This testimony is submitted pursuant to 35 Ill. Adm. Code § 103.205 and the August 21, 2002 Hearing Officer Order entered in this matter. I, Mark Davis, being duly sworn upon oath, state as follows:

#### **Education and Employment**

I have been employed by the Central Illinois Light Company ("CILCO") since August 14, 2000. I am currently responsible for Environmental Services and Compliance for CILCO's E.D. Edwards Station. I have held this position since August 2000. My responsibilities include development and implementation of environmental related programs and ensuring compliance with environmental laws and regulations.

I have a B.S. degree in Geological Sciences from Bradley University.

#### **Background**

CILCO is an electric and natural gas utility located in Central Illinois. CILCO's electric production facilities consist of two generating stations -- the Duck Creek Generating Station near Canton, Illinois and the E.D. Edwards Station in Bartonville, Illinois ("Edwards or Edwards Station"). CILCO provides electric and gas service to approximately 172,890 residential customers and to 170 industrial customers. CILCO's electric and gas service territory includes multiple counties in Central Illinois.

Edwards Station is located on the Illinois River in the Peoria major metropolitan area. One hundred thirteen (113) people are employed at Edwards Station which is staffed twenty-four (24) hours per day, seven (7) days per week. The Edwards Station consists of three boilers and attendant generating units (referred to as "Boilers" or "Units"). All three Units are coal fired. Units 1 and 2 discharge through a common stack, 503 feet in height. Unit 3 discharges through a separate stack, also 503 feet in height. The combustion exhaust gases from all three boilers are ducted through electrostatic precipitators which are designed to remove particulate matter prior to releasing the exhaust gases through the stacks. In recent years, CILCO has installed state of the art barriers on all three boilers to reduce the emissions of nitrogen oxides (NOx); equipment commonly referred to as "low NOx burners." In addition, CILCO has installed and is operating continuous emission monitoring systems ("CEMS") on all three Units which directly measure sulfur dioxide (SO<sub>2</sub>), NOx, carbon dioxide (CO2), and opacity contained in the exhaust gases. The CEMS are required by the federal "Acid Deposition Control" program developed under the Clean Air Act (also known as the "Acid Rain" regulatory program).

#### **Applicable SO2 Emission Regulatory Limits**

Boiler Nos. 1 and 3 have historically been subject to a sulfur dioxide  $(SO_2)$  emission limit of 6.6 lb/mmBtu pursuant to 35 Ill. Adm. Code § 214.561. Boiler No. 2 has been subject to a SO<sub>2</sub> emission limit of 1.8 lb/mmBtu pursuant to 35 Ill. Adm. Code § 214.141. Emissions from all three boilers collectively are subject to an overall plant-wide SO<sub>2</sub> emission limit of 34,613 lbs/hr established to ensure protection of the National Ambient Air Quality Standards ("NAAQS") for SO<sub>2</sub> under 35 Ill. Adm. Code § 214.561. These standards are summarized in the chart below:

REGULATORY LIMITS ON SO <sub>2</sub> EMISSIONS E.D. EDWARDS STATION					
Emission Unit	Applicable SO <sub>2</sub> Emission Limitation	3/20/95 Operating Permit Conditions	Applicable Regulations		
Boiler No. 1	6.6 lb/mmBtu	1.a.	35 IAC § 214.561		
Boiler No. 2	1.8 lb/mmBtu	1.b.	35 IAC § 214.141		
Boiler No. 3	6.6 lb/mmBtu	1.a.	35 IAC § 214.561		
Plantwide	34,613 lbs/hr 24-hour average basis	None	35 IAC § 214,561		

On April 15, 1999, the Illinois Pollution Control Board ("Board") entered an Order granting CILCO a variance ("variance") from the 1.8 lb/mmBtu SO<sub>2</sub> emission limit applicable to Boiler No. 2 for five years beginning January 1, 1999 through July 31, 2003. Under the conditions of the variance, CILCO was granted an <u>average</u> station-wide SO<sub>2</sub> emission limit of 4.71 lb/mmBtu over all three boilers with a maximum SO<sub>2</sub> limit of 6.6 lb/mmBtu for each boiler. The variance further provided that Boiler No. 2 was not required to meet the 1.8 lb/mmBtu SO<sub>2</sub> emission limit established by 35 Ill. Adm. Code  $\S$  214.141. CILCO's obligation to comply with all other applicable SO<sub>2</sub> emission limitations remained unchanged. CILCO remained subject to the facility-wide limit of 34,613 lbs/hr. SO<sub>2</sub> for all three boilers imposed under 35 Ill. Adm. Code  $\S$  214.561.

The Board's Order granting the variance also provided a mechanism for CILCO to obtain this relief on a permanent basis. The Order specified that CILCO notify the Illinois Environmental Protection Agency ("IEPA") by January 31, 2002 if CILCO decided to pursue permanent site specific relief consistent with the variance. The Order further required CILCO file a petition for such relief with the Board by February 28, 2002.

By correspondence dated January 25, 2002, CILCO notified IEPA of its intention to pursue permanent site specific relief from the 1.8 lb/mmBtu SO<sub>2</sub> limit of § 214.141. On February 28, 2002, CILCO filed a Petition for Adjusted Standard. Pursuant to the Board's Order of March 21, 2002, and subsequent status conferences with the Hearing Officer, CILCO filed a Petition for Site Specific Rulemaking to obtain permanent relief consistent with the variance.

#### The Benefits of Operational Flexibility

CILCO initially elected to request relief from the 1.8 lb/mmBtu limit applicable to Unit 2 through a Petition for Variance after recognizing that relief from the limit would reduce the economic hardship caused by purchasing more expensive low-sulfur coal and allow increased purchases of Illinois coal with no adverse impact to the environment. Through its variance petition, CILCO obtained an average station-wide emission limit of 4.71 lb/mmBtu over all three boilers, not to exceed 6.6 lb/mmBtu in any one boiler. CILCO was therefore able to increase the SO<sub>2</sub> emissions from Boiler No. 2 by reducing the SO<sub>2</sub> emissions from Boiler Nos. 1 and 3. CILCO's obligation to comply with all other SO<sub>2</sub> emission limitations remained unchanged. CILCO has remained subject to and in compliance with the 34,613 lbs/hr SO<sub>2</sub> limit imposed on all three Units under 35 Ill. Adm. Code § 214.561. In fact, as a result of the operational flexibility, CILCO has been able to reduce SO<sub>2</sub> emissions by approximately 20 percent.

In an increasingly competitive industry, the 1.8 lb/mmBtu limit on  $SO_2$  emissions from Unit 2 put CILCO at a competitive disadvantage. Without permanent relief, CILCO will once again be at a competitive disadvantage. The unreasonableness of the economic hardship is underscored by CILCO's commitment to full compliance with the short-term hourly emission limit applicable to all three boilers. Under the variance, CILCO has

continued to meet the short-term hourly  $SO_2$  emission limit established for Edwards Station by 35 IAC §214.561, and actually reduced  $SO_2$  emissions from all three boilers. The relief afforded CILCO the ability to achieve this in the most cost-effective and efficient way possible.

The variance relief requested by CILCO <u>did not</u> result in any significant adverse effects on air quality or increase in allowable SO<sub>2</sub> emissions from the plant. The purpose of the variance was to provide CILCO with operating flexibility. The ability to increase SO<sub>2</sub> emissions from Boiler No. 2 and offset those increased emissions by reducing emissions from Boiler Nos. 1 and 3 provided CILCO with the flexibility to utilize blended coal and/or mid-range sulfur coals in Boiler No. 2, which is the most fuel efficient unit. As anticipated, this flexibility has resulted in significant fuel cost savings, reduced operating costs associated with maintaining a separate low-sulfur coal pile and coal handling equipment for Boiler No. 2, and it promotes purchase and use of Illinois coal.

These benefits did not come at an "environmental cost." There was <u>no</u> increase in allowable SO<sub>2</sub> emissions from Edwards Station. As previously stated, SO<sub>2</sub> emissions actually decreased by approximately 20 percent. Under the variance, and under the proposed site specific rulemaking, the 34,613 lbs/hr. plant-wide limit remains unchanged. Modeling of the air quality effects resulting from the flexibility requested in the variance demonstrated there would be no significant adverse air quality impact and the NAAQS would be fully protected as a result of the relief. Specifically, the SO<sub>2</sub> emission rate established by the variance and proposed to remain in place, would not, under predictable worst case conditions, cause or contribute to any exceedance of the primary or secondary

NAAQS for  $SO_2$ . This fact remains true if CILCO obtains the relief granted in the variance on a permanent basis.

Based on the benefits to CILCO, and the absence of adverse environmental impact, the Board granted the variance. For the same reasons, the relief should be granted on a site specific permanent basis. Subsequent to the Board's Order, the variance was approved by the United States Environmental Protection Agency as a request for revision of the State Implementation Plan ("SIP") and incorporated into the approved Illinois SIP.

## **Basis for Permanent Site Specific Relief**

CILCO elected to initially pursue operational flexibility through a variance under Sections 35 through 38 of the Illinois Environmental Protection Act (415 ILCS 5/35-38 and 35 Ill. Adm. Code Part 104) rather than seek permanent site specific relief because the variables affecting CILCO's fuel strategy in the year 2000 and beyond (after implementation of the Acid Rain Program) could not be determined with certainty at that time.

CILCO's Acid Rain permit was issued on September 23, 1997 and became effective on January 1, 2000. Under the Acid Rain Program, CILCO must either limit its  $SO_2$  emissions to 18,792 tons per year or purchase additional  $SO_2$  allowances pursuant to 40 CFR § 73.10.

While maintaining compliance with all regulatory requirements, CILCO must control costs to produce electricity and become as cost-efficient as possible or face loss of customers and a declining rate base. Becoming "cost competitive" is the key to succeeding in the market-based, deregulated electric power industry. Electric utility deregulation in Illinois has converged with nationwide implementation of the Acid Rain

Program. This convergence subjects CILCO to competing pressures. At the same time competitive pressures associated with utility deregulation require CILCO to keep costs low, it must expend higher costs to achieve and maintain the  $SO_2$  emission reductions required under the Acid Rain Program.

Compliance with the Acid Rain Program can be accomplished through a number of alternatives and combinations of alternatives. Those alternatives include: purchase of Acid Rain Program  $SO_2$  allowances, purchase of low-sulfur coal to reduce  $SO_2$  emission during combustion, installation of post-combustion  $SO_2$  emission control technology or a combination of these three.

The strategy selected by CILCO has been largely dependent on the cost and availability of low-sulfur coal vs. the cost and availability of allowances vs. the cost/cost effectiveness of control technology. To date, control technology has not developed to the point where it is a cost-effective means of achieving compliance with the Acid Rain Program. Compliance solely through the purchase of low sulfur coal has similarly not been cost effective due to the absence of a local supply of this coal and the high cost to purchase it from mines outside of Illinois.

As a result, CILCO has found it cost effective to rely on the variance relief. To date, CILCO purchases Acid Rain Allowances and blends various low and mid-range sulfur coals. (See attached reports submitted to IEPA.) This has been the most cost-effective means of achieving compliance with the Acid Rain Program.

#### **Determination of Compliance**

Compliance with the applicable 34,613 lbs/hr limit (35 Ill. Adm. Code § 214.561) under the variance is computed on a daily basis from the average emission rate on that date. Compliance with permanent site specific relief would be calculated in the same

way. The following calculation will be used to verify compliance with the three unit average limit of 4.71 lb/mmBtu:

 $(H1 \times ER1) + (H2 \times ER2) + (H3 \times ER3) = 4.71 \text{ lb/mmBtu}$ (H1 + H2 + H3)

Where:	H1 = heat input to Unit 1 (mmBtu/hr)
	H2 = heat input to Unit 2 (mmBtu/hr)
	H3 = heat input to Unit 3 (mmBtu/hr)
	$ER1 = Unit 1 SO_2 emission rate (lb/mmBtu)$
	$ER2 = Unit 2 SO_2$ emission rate (lb/mmBtu)
	$ER3 = Unit 3 SO_2$ emission rate (lb/mmBtu)

CILCO will also monitor  $SO_2$  emissions to ensure compliance with all applicable limits. CEMS data will verify compliance with the station-wide average limit, as well as all other applicable  $SO_2$  emission limitations. CILCO has installed and is operating  $SO_2$ CEMS on all three units pursuant to the Acid Rain Program.

### **Consistency with Federal Law**

I have reviewed the potentially applicable federal regulations and provisions of the Clean Air Act and have determined that the requested relief, i.e., use of higher sulfur coal in Edwards Unit 2, would not be inconsistent with any federal law or regulations.

The operational change in utilizing a different quality coal in Edwards Unit 2 is expressly exempt from applicability of the New Source Performance Standards (40 CFR Part 60), even though there could be an increase in the hourly SO<sub>2</sub> emission rate. The federal regulations at 40 CFR § 60.14(e)(4) specifically exclude from the scope of a regulated "modification" uses of an alternative fuel or raw material if the facility was designed to accommodate that alternative fuel or raw material. Edwards Unit 2 was designed to combust higher sulfur coal and no physical changes will be required to do so, upon the Board's grant of the requested relief. The operational change in utilizing a different quality coal in Edwards Unit 2 is similarly exempt from the applicability of the federal Prevention of Significant Deterioration ("PSD") requirements set forth at 40 CFR § 52.21(b) through (w), and administered by the IEPA pursuant to 40 CFR § 52.735(c). The federal regulations at § 52.21(b)(2)(e) specifically exclude from the scope of a regulated "modification" uses of an alternative fuel that the facility was designed to accommodate and which was not prohibited under any PSD permit. Edwards Unit 2 was designed to utilize a higher-sulfur coal, was constructed prior to the PSD permitting program and has not otherwise become subject to the PSD regulations.

The operational change in utilizing a different quality coal in Edwards Unit 2 would not be subject to the National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61), or the National Emission Standards for Hazardous Air Pollutants for Source Categories (40 CFR Part 63).

The operational change in utilizing a different quality of coal in Edwards Unit 2 will not be inconsistent with CILCO's obligations under the Acid Rain Program, implemented through 40 CFR Parts 72 through 78. Granting the requested relief will not conflict with CILCO's obligation to have an operating permit which includes the Acid Rain requirements, hold sufficient SO<sub>2</sub> allowances for actual SO<sub>2</sub> emissions, operate CEMS to accurately monitor and report actual SO<sub>2</sub> emissions and prepare and submit all required data and reports.

In the 1999 variance proceeding, CILCO submitted a report entitled "Air Quality Demonstration in Support of a Variance to Burn Higher Sulfur Coal in Unit 2 of the Edwards Station" which documented the air quality effects of the proposed change in the

 $SO_2$  emission limit for Boiler No. 2. The ambient air quality impact analyses of the proposed increase in Unit 2 flexibility demonstrates full protection of the primary and secondary NAAQS for  $SO_2$ .

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CILCO Variance Reports to IEPA			
Report	Date		
Semi-Annual Variance Report	06/06/02		
Semi-Annual Variance Report	12/11/01		
Semi-Annual Variance Report	08/20/01		
Semi-Annual Variance Report	04/27/01		
Interim Variance Report	04/27/01		

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"The Global Power Company"

June 6, 2002

Mr. Don Sutton, Supervisor Permits Section, Bureau of Air Illinois Environmental Protection Agency 1021 N. Grand Avenue East Springfield, IL 62794-9276

# RE: AES/CILCO Semi-Annual Variance Report

Dear Mr. Sutton:

The purpose of this letter is to comply with the semi-annual reporting requirement specified in the variance to 35 Illinois Administrative Code 214.141, granted to AES/CILCO, by the Illinois Pollution Control Board. Under the terms of the variance, AES/CILCO must report on the following: (1) the current cost of Phase II Acid Rain Program allowances; (2) the current cost of low sulfur coal; and (3) a discussion of the availability of allowances and low sulfur coal. This semi-annual report covers the period December 2001 through May 2002.

Month	Cost of Acid Rain Allowances
January 2001	\$153.57
February 2001	\$167.86
March 2001	\$174.42
April 2001	\$194.96
May 2001	\$189.48
June 2001	\$198.95
July 2001	\$202.50
August 2001	\$208.00
September 2001	\$202.00
October 2001	\$186.00
November 2001	\$202.00
December 2001	\$168.50
January 2002	\$163.00
February 2002	\$164.75
March 2002	\$172.50
April 2002	\$172.65
May 2002	\$170.00

#### Spot Market Cost of Acid Rain Allowances

700 S. CILCO Lane • Bartonville, IL 61607 • Phone: (309) 633-2410 • FAX: (309) 633-2423

Mr. Don Sutton Illinois Environmental Protection Agency Page 2 June 6, 2002

# Cost of Low-Sulfur Coal

The current spot market cost of low-sulfur Central Appalachian coal (1.2 lbs./mmBtu, max.) is \$47.28/ton (including tax and transportation).

Under the variance, AES/CILCO has the flexibility to burn coals other than low-sulfur compliance coal. Two of AES/CILCO's 2002 fuel sources provide coal with sulfur contents greater than 1.2 lbs./mmBtu. One source of coal is projected to contain a sulfur content ranging from 1.25 lbs./mmBtu to 2.25 lbs./mmBtu and the other source contains a sulfur content maximum of 2.80 lbs./mmBtu. Year-to-date, the majority of the coal purchased by AES/CILCO has contained a sulfur content averaging greater than 1.94 lbs./mmBtu. The average cost of this coal is \$32.30/ton (including transportation).

#### Availability of Allowances and Low-Sulfur Coal

Acid rain allowances are available so long as the buyer is willing to pay the market price. Though the market for low-sulfur, Central Appalachian coal has declined in recent months may impact availability and thereby firm up pricing. For this reason, the flexibility afforded by the variance continues to be of great benefit to AES/CILCO both operationally and economically.

If you have any questions or would like additional information, please feel free to contact me at (309) 633-2476.

Sincerely,

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Mark Davis AES Edwards Station

SLI:st24.doc cc: Greg Russell Sandy Isbell



"The Global Power Company"

December 11, 2001

Mr. Don Sutton, Supervisor Permits Section, Bureau of Air Illinois Environmental Protection Agency 1021 North Grand Avenue East Springfield, IL 62794-9276

# Re: <u>AES/CILCO Semi-Annual Variance Report</u>

Dear Mr. Sutton:

The purpose of this letter is to comply with the semi-annual reporting requirement specified in the variance to 35 Ill. Administrative Code 214.141, granted to AES/CILCO, by the Illinois Pollution Control Board. Under the terms of the variance, AES/CILCO must report on the following: (1) the current cost of Phase II Acid Rain Program allowances; (2) the current cost of low sulfur coal; and (3) a discussion of the availability of allowances and low sulfur coal. This semi-annual report covers the period July 2001 through November 2001.

#### Spot Market Cost of Acid Rain Allowances

Month	Cost of Acid Rain <u>Allowances</u>	
January 2001	\$153.57	
February 2001	\$167.86	
March 2001	\$174.42	1
April 2001	\$194.96	
May 2001	\$189.48	4
June 2001	\$198.95	
July 2001	\$202.50	
August 2001	\$208.00	
September 2001	\$202.00	
October 2001	\$186.00	1
November 2001	\$202.00	

#### Illinois Environmental Protection Agency

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#### Cost of Low Sulfur Coal

The current spot market cost of low sulfur compliance coal (<1.2 lbs/mmBtu) is \$55.47/ton (including tax and transportation).

Under the variance, AES/CILCO has the flexibility to burn coals other than low sulfur compliance coal. In 2001, AES/CILCO has relied upon two types of lower sulfur coal to comply with the variance. One source of coal contained a sulfur content of 1 70 lbs/mmBtu and the other source contained a sulfur content greater than 2.0 lbs/mmBtu. To date, the majority of the coal purchased by AES/CILCO has contained a sulfur content greater than 2.0 lbs/mmBtu. The cost of this fuel has averaged \$43.07/ton (including transportation).

#### Availability of Allowances and Low Sulfur Coal

Acid rain allowances are available so long as the buyer is willing to pay the market price. However, the low sulfur coal market remains tight. Low sulfur coal supplies continue to be limited and in great demand resulting in inflated pricing. For this reason, the flexibility afforded by the variance continues to be of great benefit to AES/CILCO both operationally and economically.

If you have questions or would like additional information, please feel free to contact me at 309-633-2861.

Sincerely,

Mark Davis AES Edwards Station

Cc: Greg Russell Sandy Isbell



"The Global Power Company"

August 20, 2001

Mr. Don Sutton, Supervisor Permits Section, Bureau of Air Illinois Environmental Protection Agency 1021 North Grand Avenue East Springfield, IL 62794-9276

# Re: <u>AES/CILCO Semi-Annual Variance Report</u>

#### Dear Mr. Sutton:

The purpose of this letter is to comply with the semi-annual reporting requirement specified in the variance to 35 III. Administrative Code 214.141, granted to AES/CILCO, by the Illinois Pollution Control Board. Under the terms of the variance, AES/CILCO must report on the following: (1) the current cost of Phase II Acid Rain Program allowances; (2) the current cost of low sulfur coal; and (3) a discussion of the availability of allowances and low sulfur coal. This semi-annual report covers the period January 2001 through June 2001.

#### Spot Market Cost of Acid Rain Allowances

<u>Month</u>	Cost of Acid Rain Allowances	
January 2001	\$153.57	î. Î.
February 2001	\$167.86	1
March 2001	\$174.42	4.7
April 2001	\$194.96	
May 2001	\$189.48	
June 2001	\$198.95	7-1

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# Illinois Environmental Protection Agency

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# Cost of Low Sulfur Coal

The current spot market cost of low sulfur compliance coal (<1.2 lbs/mmBtu) is \$73.96/ton (including tax and transportation).

Under the variance, AES/CILCO has the flexibility to burn coals other than low sulfur compliance coal. In 2001, AES/CILCO relied upon two types of lower sulfur coal to comply with the variance. One source of coal contained a sulfur content of 1.70 lbs/mmBtu and the other source contained a sulfur content greater than 2.0 lbs/mmBtu. To date, the majority of the coal purchased by AES/CILCO has contained a sulfur content greater than 2.0 lbs/mmBtu. The cost of this fuel has averaged \$34.14/ton (including transportation).

# Availability of Allowances and Low Sulfur Coal

Acid rain allowances are available so long as the buyer is willing to pay the market price. However, the low sulfur coal market remains tight. Low sulfur coal supplies are limited and in great demand resulting in inflated pricing. For this reason, the flexibility afforded by the variance has been of great benefit to AES/CILCO both operationally and economically.

If you have questions or would like additional information, please feel free to contact me at 309-633-2861.

Sincerely,

Mark Davis AES Edwards Station

Cc: Greg Russell Sandy Isbell Jim Kamin

"The Global Power Company"



April 27, 2001

Mr. Don Sutton, Supervisor Permits Section, Bureau of Air Illinois Environmental Protection Agency 1021 North Grand Avenue East Springfield, IL 62794-9276

#### CILCO Semi-Annual Variance Report Re:

Dear Mr. Sutton:

On April 15, 1999, the Illinois Pollution Control Board granted a variance from 35 Ill. Admin. Code 214.141 to the Central Illinois Light Company (CILCO). Under the terms of the variance, CILCO must submit to the Illinois Environmental Protection Agency (IEPA) a semiannual report beginning on December 1, 2000. The report must contain the following information: (1) the current cost of Phase II Acid Rain Program allowances; (2) the current cost of low sulfur coal; and (3) a discussion of the availability of allowances or low sulfur coal.

The purpose of this letter is to comply with the semi-annual reporting requirement. The required information is set forth below. CILCO recognizes this information is submitted past December 31, 2000. We respectfully request IEPA's forbearance for the reporting delay. CILCO's long time Director of Environmental Affairs accepted employment with another company. Additionally, CILCO just completed its true up of 2000 acid rain allowances. As you know, this process cannot begin until January of each year.

# Current Cost of Acid Rain Allowances

As IEPA is aware, the cost of acid rain allowances fluctuates. Set forth below is the spot market price of allowances for the last quarter of 2000 and first quarter of 2001.

Month	Cost of Acid Rain <u>Allowances</u>	
October 2000	\$152.30	1
November 2000	\$143.69	i
December 2000	\$129.71	· ·
January 2001	\$153.57	
February 2001	\$167.86	
March 2001	\$174.42	

Illinois Environmental Protection Agency

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# Current Cost of Low Sulfur Coal

The cost of low sulfur coal also varies. The cost of low sulfur compliance coal (<1.2 lbs/mmBtu) on the spot market ranged from \$46.13 to \$53.26 (including transportation) during the last quarter of 2000.

As you know, under the variance CILCO has the flexibility to burn coals other than low sulfur compliance coal. In 2000, CILCO relied on two types of lower sulfur coal to comply with the variance. CILCO purchased coal with a sulfur content of 1.77 and 2.3 lbs/mmBtu from Consol's Rend Lake Mine and from Exxon's Monterey Mine. The cost of this lower sulfur coal ranged from \$25.65 to \$30.65 (including transportation).

#### Availability of Allowances and Low Sulfur Coal

Acid rain allowances are available so long as the buyer is willing to pay the market price. The low sulfur coal market is currently a tight market. Supplies are limited and in great demand. As a result, the price of low sulfur coal is currently high. For this reason, the flexibility afforded by the variance has been of benefit to CILCO both operationally and economically. This is explained further in the separate Interim Variance report regarding fuel strategy analysis also required under the variance.

If you have questions or would like additional information, please feel free to contact me at 309-633-2861.

Sincerely,

Mark Davis AES/CILCO Edwards Station

Cc: Jerry Cagle Sandy Isbell Diana Jagiella, Howard & Howard



"The Global Fower Company"

# April 27, 2001

Mir. Don Sutton, Supervisor Permits Section, Bureau of Air Illinois Environmental Protection Agency 1021 North Grand Avenue East Springfield, IL 62794-9276

# Re: CILCO Interim Variance Report

Dear Mr. Sutton:

On April 15, 1999, the Illinois Pollution Control Board granted a variance from 35 Ill. Admin. Code 214.141 for the E.D. Edwards Generating Station operated by the Central Illinois Light Company (CILCO). Under the terms of the variance, CILCO must submit to the Illinois Environmental Protection Agency (IEPA) an Interim report on January 31, 2001. The Interim Report must evaluate the feasibility of various strategies for complying with the Phase II Acid Rain program, including the use of various types of coal, the purchase of allowances, or the installation of a scrubber or other desulfurization systems.

The purpose of this letter is to comply with the Interim reporting required information is set forth below. CILCO recognizes this information is submitted past January 31, 2001. We respectfully request IEPA's forbearance for the reporting delay. CILCO's long time Director of Environmental Affairs accepted employment with another dompany. Additionally, CILCO just completed its true up of 2000 acid rain allowances which provided accurate information on the current market price of allowances. As you know, this process cannot begin until January of each year.

# Phase II Compliance Through Use of Various Coal Types and Purchase of Acid Rain Allowances

As explained in more detail below, the variance has allowed CILCO to achieve operational efficiencies and cost savings from fuel source flexibility. It has been more economical and operationally efficient for CILCO to purchase the acid rain allowances necessary to combust coal other than low sulfur compliance coal (coal with sulfur content of 1.2 Ibs/mmbtu).

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Illinois Environmental Protoction Agency

#### Page 2

Under Phase II of the Acid Rain program, CILCO has been allocated 22,267 acid rain allowances for the Edwards Station. Based on these allowances, CILCO can achieve compliance with the Acid Rain Program through use of low sulfur compliance coal (also referred to as compliance coal). However, the use of low sulfur compliance coal significantly increases the cost of compliance. Supplies of low sulfur compliance coal are limited and in high demand. Most low sulfur coal supplies are committed by contract and the sources are located outside of Illinois, resulting in higher fuel costs. Low sulfur coal supplies are currently available from Eastern Kentucky and West Virginia. The current spot market cost of low sulfur compliance coal is \$63.79 per ton, including transportation.

For this reason, CILCO is relying on the flexibility provided by the variance to use coal other than low sulfur compliance coal. While this has required the purchase of 36,000 additional FY 2000 vintage and 19,000 FY 2001 vintage acid rain allowances, this strategy remained both operationally and economically preferable to reliance on low sulfur compliance coal due to the lower cost associated with these alternative fuel types.

Set forth below is a chart illustrating the various coal types CILCO has elected to use for compliance at Edwards Station.

•		1
UNIT		
Boiler 1	Blend of: 80% Concol Rend Lake coal with	ulfur.
	content of 2.3 lbs/mmBtu (effective 1/1/2001	the
	sulfur content is 2.4 lbs/mmBtu) and 20% Ex	kon
•	Monterey ccal with sulfur content of 1.77	
	lbs/mmBtu (effective 1/1/2001 the sulfur con	ent is
•	1.61 los/mmBtu)	·
Boiler 2	Blend of: 50% Consol Rend Lake coal and 5	2%
	Exxon Monterey coal	
Beiler 3	Blend of: 80% Conso! Rend Lake coal and 2	D%:-
,	Turtis Elkhart coal with sulfur content of 5.6	
	lbs/mmBtu. In May 2001 this fuel source wil	be
	switched to a blend of 75% Consol Rend Lak	coal
	and 25% Exxon Monterey coal.	

CILCO's use of these coal blends (which was made possible only bec use of the flexibility afforded by the Loard's variance) has allowed Edwards Station to comply with Phase II of the Acid Rain program while achieving significant costs savings. Illinois Environmental Protection Agency

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# Installation of Scrubber or other Desulfurization Equipment

Installation of a scrubber or other desulfurization equipment remains the most expensive means of Phase II compliance. Installation of a scrubber at Edwards Station is no operationally feasible due to space limitations. Even if there was not this practical limitation, the cost would be prohibitive. The cost of scrubber installation could easily exceed \$40 million. At this juncture, Phase II compliance through installation of a scrubber would not be economically prudent in comparison to the other strategies available.

I hope that you find this report useful. If you have questions or need additional information, please feel free to contact me at 309-633-2861.

Sincerely,

Mark Davis

AES/CILCO Edwards Station

Cc: Jcrry Cagle Sandy Isbell Diana Jagiella, Howard & Howard

#### BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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IN THE MATTER OF THE PROPOSAL OF: CENTRAL ILLINOIS LIGHT COMPANY FOR A SITE SPECIFIC RULEMAKING AMENDING 35 ILL. ADM. CODE § 214.561.

R 02-21

(Site Specific Rulemaking)

#### **CERTIFICATE OF SERVICE**

I, the undersigned, hereby certify that I have served the attached Testimony of Mark Davis upon the following persons:

<u>Via Federal Express</u> Dorothy M. Gunn, Clerk Illinois Pollution Control Board James R. Thompson Center 100 West Randolph, Suite 11-500 Chicago, IL 60601-3218

<u>Via Federal Express</u> John Knittle, Hearing Officer Illinois Pollution Control Board 1717 Philo Road, Suite 25 Urbana, IL 61802

Dated: October 10, 2002

Jon S. Faletto Diana M. Jagiella Howard & Howard Attorneys, P.C. 211 Fulton Street, Suite 600 Peoria, IL 61602-1350 (309) 672-1483

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<u>Via Federal Express</u> Rachel L. Doctors Assistant Counsel Division of Legal Counsel Illinois Environmental Protection Agency 1021 North Grand Avenue East P. O. Box 19276 Springfield, IL 62794-9276

syella Diana M. Jagiella

#### THIS FILING IS SUBMITTED ON RECYCLED PAPER