Exhibit No.:
Issues: *The Staff's Interim Energy Charge Recommendation Regarding Fuel and Purchased Power Expense*
Witness: *James C. Watkins*
Sponsoring Party: *MoPSC Staff*
Type of Exhibit: *Supplemental Testimony*
Case No.: *ER-2001-299*
Date Testimony Prepared: *June 1, 2001*

MISSOURI PUBLIC SERVICE COMMISSION

UTILITY OPERATIONS DIVISION

SUPPLEMENTAL TESTIMONY IN SUPPORT OF THE STAFF'S CHANGE OF POSITION REGARDING FUEL AND PURCHASED POWER EXPENSE

JAMES C. WATKINS

THE EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. ER-2001-299

Jefferson City, Missouri
June, 2001

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CASE NO. ER-2001-299

Q. Please state your name and business address.

A. My name is James C. Watkins and my business address is Missouri Public Service Commission, 200 Madison Street, P. O. Box 360, Jefferson City, Missouri 65102.

Q. Are you the same James C. Watkins who previously filed direct, rebuttal and surrebuttal testimony on the issue of customer class cost of service in this case?

A. Yes, I am.

Q. Do you have another role in this case?

A. Yes. I am one of the Staff's rate case coordinators. Mr. Cary G. Featherstone is the other rate case coordinator assigned to this rate case.

Q. What is the purpose of this supplemental testimony?

A. The purpose of my supplemental testimony in support of the Staff's change of position is to provide the Commission with the Staff's rationale for changing its position and to demonstrate that the Commission's approval of the Staff's recommendation will result in just and reasonable rates. The details of the Staff's recommendation regarding fuel and purchased power expense are shown in Schedule 1. Mr. Featherstone and I can answer questions regarding Schedule 1.

Q. Do you have any prior experience with the mechanisms involved in the Staff's recommendation?

A. Yes. During the mid-80's one of my responsibilities was to forecast fuel prices and determine an appropriate "allowance for forecasted fuel expense" to be included in the revenue requirement of electric utilities, subject to true-up and refund. I was also involved in setting up the mechanics of this process, participating in the true-up audits and monitoring any required refunds.

Q. Does the Staff's recommendation in this case provide for a similar process?

A. Yes. The Staff's recommendation is based on a similar process; however, the situation is somewhat different and the process has been refined. During the mid-80's, the concern of the fuel price forecast was to forecast how fast fuel prices would increase. There was little, if any, concern that fuel prices might fall. Today's forecasting concerns are whether natural gas prices will rise or fall and similarly, whether electricity prices in the wholesale market (purchased power prices) will rise or fall. An additional concern regarding the wholesale market is whether price spikes in the wholesale market could occur at a time when, due to forced outages of its generating units, Empire would be required to purchase power at extremely high prices.

The Staff's recommendation also provides for a true-up and refund process whereby records of each individual customer's payments for the Interim Energy Charge (IEC) are retained and, in the event of a refund, the overcharges to each individual customer are refunded to that customer, plus interest.

Q. Why does the Staff believe that it is necessary for the Commission to approve an Interim Energy Charge in this case?

A. The Staff believes that the magnitude of the effect on Empire and its customers of guessing wrong as to the future direction of fuel and purchased power costs makes it necessary to have a mechanism in place to limit this risk. The IEC basically represents the difference between a forecast that fuel and purchased power costs will return to historical levels and a fairly conservative forecast of costs based on recent prices and a continuing upward price trend suggested by futures prices. This difference amounts to approximately $20 million per year on a Missouri jurisdictional basis. This is roughly equivalent in magnitude to Empire's Missouri unadjusted test-year Net Operating Income before taxes.

If rates are set based on historical costs and it turns out that actual costs are at the forecasted level, Empire's entire Net Operating Income for the year could be wiped out and Empire could suffer serious financial results. If, on the other hand, rates are set based on forecasted costs and it turns out that actual costs are actually at historical levels, Empire's Net Operating Income would be doubled and its customers would have been "overcharged" by $20 million.

Q. Why does the Staff believe that approval of the Interim Energy Charge will result in just and reasonable rates?

A. Approval of the Interim Energy Charge will result in rates that recover at least the level of costs based on historical prices and at most the level of costs based on a fairly conservative upward forecast of prices. It is intended that, within this range, the IEC will recover exactly Empire's prudently incurred actual fuel and purchased power

costs. Furthermore, this approach shares the burden of the price risk between Empire and its customers in such a way as to greatly reduce the risk to both Empire and its customers.

Q. If the Commission approves the Staff's recommendation regarding fuel and purchased power expense, will that affect the Commission's resolution of other issues in this case?

A. Yes. It will affect the resolution of the Rate Design (distribution of class revenue increases) issue. At the time of filing direct testimony on Class Cost of Service and Rate Design issues, none of the parties anticipated the possibility of the inclusion of an Incremental Energy Charge in the determination of Empire's rates. The parties' positions regarding the rate design treatment of the IEC has now been provided in the parties' surrebuttal testimony and/or position statements.

If the Staff's recommendation is approved, the portion of the overall revenue requirement associated with the IEC will be collected from each customer class on an equal-cents-per-kWh basis. It will, therefore, be necessary for the Commission to determine how the remaining portion of Empire's revenue requirement, i.e., the non-refundable "base" portion not associated with the IEC, should be collected from ratepayers. The Commission will also need to determine whether the distribution of non-IEC class revenues determined by the Commission should remain in effect on and after October 1, 2003, the proposed expiration date of the IEC.

Q. What is the Staff's position on the rate design treatment of the IEC?

A. The Staff's position is that the Commission should decide the appropriate distribution to customer classes of any increase in Empire's "base rates" (the non-refundable portion of the overall increase in revenues), then approve the IEC to be an

additional charge to appear on each rate schedule. Upon the expiration of the IEC, the "base" rates determined by the Commission would remain in effect without need of adjustment. This position is entirely consistent with the Staff's customer class cost-of-service study methodology and results. It is also entirely consistent with the Staff's recommendations on rate design.

Q. If the Commission rejects the Staff's position on Rate Design, will future (October 1, 2003) adjustments to "base" rate levels be required?

A. Not necessarily; however, the Commission should be aware that it is only the Staff's (and the Office of the Public Counsel's[1]) recommendation that results in the same distribution of "base" revenues to customer classes, both during the period in which the IEC is in effect and after it expires, as it recommended in its prefiled testimony in this case. During the period in which the IEC is in effect, the overall distribution of revenues (including the IEC revenues) will be affected by the equal-cents-per-kWh allocation of the IEC costs.

If the Commission adopts Praxair's position that the Commission should only determine the distribution of overall revenues (including the IEC revenues), the resulting distribution of "base" revenues to customer classes will not be as Praxair recommended in its prefiled testimony in this case, either during the period in which the IEC is in effect or after it expires, unless new tariffs reflecting its proposed rate design are put into effect October 1, 2003. Failing to readjust the rate design, effective October 1, 2003, could

[1] Empire's stated position on this issue is that "Empire believes it is appropriate in this case to increase rates to all classes equally." It is not clear to the Staff from this statement whether Empire supports an equal percentage increase to "base" rates.

result in Praxair being the only customer on Empire's system to receive a rate reduction in this case while every other Empire customer receives a rate increase.

The nature of the Commission's decisions regarding the appropriate rate design have been made more complicated in this case because, while the parties all initially proposed the distribution of any revenue increase to customer classes based on some percentage of current revenues, the IEC charge is an equal cents-per-kWh charge. An equal cents-per-kWh charge represents a different percentage of current revenues for each class.

Q. What is your recommendation to the Commission regarding fuel and purchased power expense?

A. I recommend that the Commission adopt the Staff's proposal contained herein regarding fuel and purchased power expense as the most reasonable resolution of the related issues and as the resolution of the issues most likely to result in just and reasonable rates.

Q. Does this conclude your prefiled supplemental testimony in support of the Staff's changed position regarding fuel and purchased power expense?

A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

IN THE MATTER OF THE APPLICATION OF THE EMPIRE DISTRICT ELECTRIC COMPANY FOR A GENERAL RATE INCREASE.	))))	Case No. ER-2001-299

AFFIDAVIT OF JAMES C. WATKINS

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

James C. Watkins, of lawful age, on his oath states: that he has participated in the preparation of the foregoing written testimony in question and answer form, consisting of 6 pages of testimony to be presented in the above case, that the answers in the attached written testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true to the best of his knowledge and belief.

James C. Watkins

Subscribed and sworn to before me this 1st day of June, 2001.

DAWN L. HAKE
Notary Public – State of Missouri
County of Cole
My Commission Expires Jan 9, 2005

Dawn L. Hake
Notary Public

My commission expires _____

THE STAFF'S INTERIM ENERGY CHARGE (IEC) RECOMMENDATION REGARDING FUEL AND PURCHASED POWER EXPENSE

1. The most reasonable resolution of the fuel and purchased power expense issues in this case will be achieved by the inclusion of a specific amount in the cost of service on a permanent (i.e., not subject to refund) basis and by the inclusion of another additional amount on an interim and subject to true-up and refund basis. The specific amount to be included in the Missouri jurisdictional cost of service on a permanent basis is $91,599,932. This figure is meant to encompass all retail Missouri jurisdictional charges accumulated in the FERC account numbers 501, 547 and 555 and will be updated in the August 2001 true-up portion of this case. The other portion, referred to herein as an "Interim Energy Charge," is explained in more detail herein and generally is designed to attempt to address the potential volatility in natural gas and wholesale electricity prices. This Interim Energy Charge ("IEC") will be reflected separately on all Empire Missouri rate schedules. The revenue from the IEC will be collected on an interim and subject to true-up and refund basis. This recommendation does not attempt to determine the rate design or the overall revenue requirement in this case.

2. The IEC, to be effective October 1, 2001, will appear on each Empire rate schedule and will indicate that a separate charge of 0.54 ¢ for each kWh will be made, but the amount collected by Empire pursuant to the 0.54 ¢ charge is subject to true-up and refund pursuant to the Order of the Commission in Case No. ER-2001-299. The amount is based on the difference between a Base amount of 2.52 ¢ / kWh and a Forecast amount of 3.06 ¢ / kWh. The derivation of the Base and Forecast figures is shown in the attached Appendix A. Empire shall bill the IEC for all usage occurring during the period it is effective.

3. Empire rate schedules PL and SPL will contain a flat charge which will be interim and subject to refund based on the assumed kWh usage underlying the charge. The amount of the assumed usage is attached as Appendix B.

4. The rate schedules to be filed by Empire pursuant to this recommendation will indicate that the IEC itself (as opposed to the terms and conditions applying to the IEC true-up

and potential refund contained in this recommendation) will expire at 12:01 a.m. on October 1, 2003. If conditions warrant, Empire may file a general rate case in the Fall of 2002 with the timing of the implementation of replacement rate schedules from that case designed to coincide with the expiration of the IEC.

5. Subsequent to the expiration of the IEC, a true-up audit will commence ("the IEC true-up audit") in which the Staff and the Public Counsel will have the opportunity to audit Empire's actual fuel costs for the period during which the IEC was in effect under the same terms and conditions that apply to audits in general rate cases before the Commission. If the IEC true-up audit determines that all or a portion of the revenue collected by Empire pursuant to the IEC exceeds Empire's actual and prudently incurred costs for fuel and purchased power (as recorded in the FERC accounts 501, 547 and 555) on a retail Missouri jurisdictional basis during the IEC period, Empire will refund the excess above the greater of the actual or the Base, plus interest. No refund will be made if Empire's actual and prudently incurred costs for fuel and purchased power during the IEC period equal or exceed the Forecast amount. If a dispute arises in the IEC true-up audit as to the prudence of Empire's fuel or purchased power costs, the dispute will be presented to the Commission in a timely fashion consistent with the due process rights of the parties to adequately prepare their cases. No refund shall be made as to the amount in dispute until there is a final determination of that dispute, but interest shall continue to accrue during the litigation of the dispute and will be payable by Empire to the extent it is finally determined that Empire is required to make a refund of all or a portion of the amount in dispute.

A. The amount of the IEC to be refunded will be calculated by subtracting the greater of 1) Empire's actual retail Missouri jurisdictional fuel and purchase power expense or 2) the Base fuel and purchase power expense (2.52 ¢ / kWh times actual retail Missouri jurisdictional kWh sales) from the Forecast fuel and purchase power expense (3.06 ¢ / kWh times actual retail Missouri jurisdictional kWh sales). This amount, if positive, is the amount of the IEC to be refunded.

B. Each customer's refund (if there is to be a refund) will be calculated by multiplying the amount of the IEC to be refunded, expressed as a percentage of the total IEC charged to customers, by the total IEC charged to that customer. Examples can be found in the attached Appendix C.

C. The interest rate to be used will be the same as the prime rate of interest (as found in the Money Rates section of the Wall Street Journal) in effect on the day the IEC expires and will be applied to the amount to be refunded. Interest (if there is a refund) will be applied for the period from the end of the first twelve months the IEC is in effect through the end of the calendar month prior to the billing month in which bill credits for the refund appear on customers' bills. (For the purposes of this calculation, it is assumed that the total amount of any refund accrues during the first year and interest applies thereafter.)

D. All Empire Missouri retail customers with electric usage during the period in which the IEC is in effect are potentially eligible to receive a refund, including interest and all applicable taxes and fees, if the terms and conditions of this recommendation require such. Generally, any such refund will appear as a one-time credit on the customer's bill, except in cases where a customer is no longer a customer in the billing month in which bill credits appear on the bills of remaining customers. In that instance, Empire will mail to the last known address of such former customer a check for the amount of the refund owed that former customer. No checks will be issued to customers for refund amounts of less than $3.00. Empire may set off the amount of any refund owed a particular former customer against any amounts owed Empire by that former customer. After the bill credits have been made and checks issued, any amount of the total refund plus interest which may remain in Empire's possession six months after the end of the application of the bill credits, for example, due to the inability to locate a former customer, shall be donated by Empire promptly to the Joplin, Missouri chapter of the American Red Cross to help fund its Project Help.

E. During the period in which the IEC is in effect, Empire must provide the Staff and the Public Counsel with Empire's routine monthly revenue and sales reports which

include the following data : (1) actual kWh sales for each Missouri retail rate code by billing month and by calendar month, and (2) the revenues from kWh sales, exclusive of taxes, for each Missouri retail rate code by billing month and by calendar month. The routine reports shall also specifically identify the revenues associated with the IEC. Empire shall submit this data in electronic format to the Commission's Electric Department on a quarterly basis by no later than one month after the end of each calendar quarter. Empire must also submit the following information for the duration of the IEC to the Commission's Accounting Department and to Public Counsel:

1. monthly operating reports
2. monthly fuel reports
3. monthly purchase power and interchange sales report
4. monthly outage reports including Iatan outages
5. monthly fuel prices for a). coal and freight, b). natural gas (commodity and transportation separately) and c). oil
6. monthly statement identifying significant changes in fuel/rail contracts, capacity agreements and unusual operating conditions such as significant power plant outages, unusually high purchase power prices and natural gas prices, etc.

F. Commencing with the calendar quarter beginning October 1, 2001, and continuing during the course of the expected twenty-four month duration of the IEC, Empire must provide quarterly reports to the Staff and the Public Counsel relating to Empire's analysis and record keeping for any and all natural gas capacity release and off-system natural gas sales opportunities and transactions. In this report, Empire must provide information showing the amount of natural gas capacity that was available for its own use, the amount used, the amount available for capacity release, the amount released, the party to whom the capacity was released, the price of the release, and its duration, along with any other relevant information related to the transaction. This quarterly report shall also provide information showing the amount of off-

system natural gas sales, the party to whom the off-system natural gas sale was made, the price of the sale, and its duration, along with any other relevant information related to the transaction. This report will also include Empire's analysis as to the natural gas market conditions during the time period covered, with explanations as to why Empire did or did not make any natural gas capacity releases or off-system natural gas sales. Any revenues collected by Empire due to the release of unused natural gas capacity or net revenues from off-system sales of natural gas during the duration of the IEC will be used to offset the calculation of the cost of fuel and purchased power supplied to Empire's ratepayers on a dollar-for-dollar basis.

APPENDIX A

Calculation of Rate for Interim Energy Charge Provision

Total Company	Base	Forecast	Increment
Price $/MWH	$20.00	$25.00	$5.00 / MWH
MWH	4,803,523.00	4,803,523.00	
Fuel & Purchased Power	$96,070,460	$120,088,075	
Capacity Charge on Purchase	$16,193,520	$16,193,520	
Fuel & Purchased Power Expense	$112,263,980	$136,281,595	
MWH	4,803,523.00	4,803,523.00	
Price $/MWH	$23.37	$28.37	$5.00 / MWH
Allocation Factor Missouri Retail			
0.8184 Fuel & Purchased Power	$78,624,064	$98,280,081	
0.8013 Capacity Charge on Purchase	$12,975,868	$12,975,868	
Fuel & Purchased Power Expense	$91,599,932	$111,255,948	
Retail kWh Sales	3,636,036,241	3,636,036,241	
Price $/kWh	$0.0252	$0.0306	
	Interim Energy Charge:		$0.0054 / kWh

Schedule 1
Appendix A

APPENDIX B

Missouri Private Lighting and Street Lighting			
PL-Private Lighting			
	Monthly		Increase
Light Size/Type	kWhs	X $0.0054	Amount
6,800 Lumen Standard Mercury	65	0.0054	$ 0.35
20,000 Lumen Standard Mercury	156	0.0054	$ 0.84
54,000 Lumen Standard Mercury	373	0.0054	$ 2.01
6,000 Lumen Standard Sodium	31	0.0054	$ 0.17
16,000 Lumen Standard Sodium	58	0.0054	$ 0.31
27,500 Lumen Standard Sodium	106	0.0054	$ 0.57
50,000 Lumen Standard Sodium	157	0.0054	$ 0.85
12,000 Lumen Standard Metal Halide	59	0.0054	$ 0.32
20,500 Lumen Standard Metal Halide	85	0.0054	$ 0.46
36,000 Lumen Standard Metal Halide	135	0.0054	$ 0.73
20,000 Lumen Mercury Flood	156	0.0054	$ 0.84
54,000 Lumen Mercury Flood	373	0.0054	$ 2.01
27,500 Lumen Sodium Flood	106	0.0054	$ 0.57
50,000 Lumen Sodium Flood	157	0.0054	$ 0.85
140,000 Lumen Sodium Flood	359	0.0054	$ 1.94
12,000 Lumen Metal Halide Flood	59	0.0054	$ 0.32
20,500 Lumen Metal Halide Flood	85	0.0054	$ 0.46
36,000 Lumen Metal Halide Flood	135	0.0054	$ 0.73
110,000 Lumen Metal Halide Flood	338	0.0054	$ 1.83

APPENDIX B

SPL-Municipal Street Lighting

Light Size/Type	Annual kWh	Month	Usage Factor	Monthly kWhs	X $0.0054	Increase Amount
4,000 Lumen Incandescent	1088	Jan	0.103	112.064	0.0054	$ 0.61
	1088	Feb	0.089	96.832	0.0054	$ 0.52
	1088	Mar	0.087	94.656	0.0054	$ 0.51
	1088	Apr	0.075	81.6	0.0054	$ 0.44
	1088	May	0.07	76.16	0.0054	$ 0.41
	1088	Jun	0.064	69.632	0.0054	$ 0.38
	1088	Jul	0.067	72.896	0.0054	$ 0.39
	1088	Aug	0.073	79.424	0.0054	$ 0.43
	1088	Sep	0.079	85.952	0.0054	$ 0.46
	1088	Oct	0.091	99.008	0.0054	$ 0.53
	1088	Nov	0.098	106.624	0.0054	$ 0.58
	1088	Dec	0.104	113.152	0.0054	$ 0.61
Total				**1088**		**$ 5.88**

Light Size/Type	Annual kWh	Month	Usage Factor	Monthly kWhs	X $0.0054	Increase Amount
10,000 Lumen Incandescent	2331	Jan	0.103	240.093	0.0054	$ 1.30
	2331	Feb	0.089	207.459	0.0054	$ 1.12
	2331	Mar	0.087	202.797	0.0054	$ 1.10
	2331	Apr	0.075	174.825	0.0054	$ 0.94
	2331	May	0.07	163.17	0.0054	$ 0.88
	2331	Jun	0.064	149.184	0.0054	$ 0.81
	2331	Jul	0.067	156.177	0.0054	$ 0.84
	2331	Aug	0.073	170.163	0.0054	$ 0.92
	2331	Sep	0.079	184.149	0.0054	$ 0.99
	2331	Oct	0.091	212.121	0.0054	$ 1.15
	2331	Nov	0.098	228.438	0.0054	$ 1.23
	2331	Dec	0.104	242.424	0.0054	$ 1.31
Total				**2331**		**$ 12.59**

Light Size/Type	Annual kWh	Month	Usage Factor	Monthly kWhs	X $0.0054	Increase Amount
7,000 Lumen Mercury Vapor	784	Jan	0.103	80.752	0.0054	$ 0.44
	784	Feb	0.089	69.776	0.0054	$ 0.38
	784	Mar	0.087	68.208	0.0054	$ 0.37
	784	Apr	0.075	58.8	0.0054	$ 0.32
	784	May	0.07	54.88	0.0054	$ 0.30
	784	Jun	0.064	50.176	0.0054	$ 0.27
	784	Jul	0.067	52.528	0.0054	$ 0.28
	784	Aug	0.073	57.232	0.0054	$ 0.31
	784	Sep	0.079	61.936	0.0054	$ 0.33
	784	Oct	0.091	71.344	0.0054	$ 0.39
	784	Nov	0.098	76.832	0.0054	$ 0.41
	784	Dec	0.104	81.536	0.0054	$ 0.44
Total				**784**		**$ 4.23**

APPENDIX B

SPL-Municipal Street Lighting

Light Size/Type	Annual kWh	Month	Usage Factor	Monthly kWhs	X $0.0054	Increase Amount
11,000 Lumen Mercury Vapor	1186	Jan	0.103	122.158	0.0054	$ 0.66
	1186	Feb	0.089	105.554	0.0054	$ 0.57
	1186	Mar	0.087	103.182	0.0054	$ 0.56
	1186	Apr	0.075	88.95	0.0054	$ 0.48
	1186	May	0.07	83.02	0.0054	$ 0.45
	1186	Jun	0.064	75.904	0.0054	$ 0.41
	1186	Jul	0.067	79.462	0.0054	$ 0.43
	1186	Aug	0.073	86.578	0.0054	$ 0.47
	1186	Sep	0.079	93.694	0.0054	$ 0.51
	1186	Oct	0.091	107.926	0.0054	$ 0.58
	1186	Nov	0.098	116.228	0.0054	$ 0.63
	1186	Dec	0.104	123.344	0.0054	$ 0.67
Total				**1186**		**$ 6.40**

Light Size/Type	Annual kWh	Month	Usage Factor	Monthly kWhs	X $0.0054	Increase Amount
20,000 Lumen Mercury Vapor	1868	Jan	0.103	192.404	0.0054	$ 1.04
	1868	Feb	0.089	166.252	0.0054	$ 0.90
	1868	Mar	0.087	162.516	0.0054	$ 0.88
	1868	Apr	0.075	140.1	0.0054	$ 0.76
	1868	May	0.07	130.76	0.0054	$ 0.71
	1868	Jun	0.064	119.552	0.0054	$ 0.65
	1868	Jul	0.067	125.156	0.0054	$ 0.68
	1868	Aug	0.073	136.364	0.0054	$ 0.74
	1868	Sep	0.079	147.572	0.0054	$ 0.80
	1868	Oct	0.091	169.988	0.0054	$ 0.92
	1868	Nov	0.098	183.064	0.0054	$ 0.99
	1868	Dec	0.104	194.272	0.0054	$ 1.05
Total				**1868**		**$ 10.09**

Light Size/Type	Annual kWh	Month	Usage Factor	Monthly kWhs	X $0.0054	Increase Amount
53,000 Lumen Mercury Vapor	4475	Jan	0.103	460.925	0.0054	$ 2.49
	4475	Feb	0.089	398.275	0.0054	$ 2.15
	4475	Mar	0.087	389.325	0.0054	$ 2.10
	4475	Apr	0.075	335.625	0.0054	$ 1.81
	4475	May	0.07	313.25	0.0054	$ 1.69
	4475	Jun	0.064	286.4	0.0054	$ 1.55
	4475	Jul	0.067	299.825	0.0054	$ 1.62
	4475	Aug	0.073	326.675	0.0054	$ 1.76
	4475	Sep	0.079	353.525	0.0054	$ 1.91
	4475	Oct	0.091	407.225	0.0054	$ 2.20
	4475	Nov	0.098	438.55	0.0054	$ 2.37
	4475	Dec	0.104	465.4	0.0054	$ 2.51
Total				**4475**		**$ 24.17**

APPENDIX B

SPL-Municipal Street Lighting

Light Size/Type	Annual kWh	Month	Usage Factor	Monthly kWhs	X $0.0054	Increase Amount
6,000 Lumen High Pressure Sodium	374	Jan	0.103	38.522	0.0054	$ 0.21
	374	Feb	0.089	33.286	0.0054	$ 0.18
	374	Mar	0.087	32.538	0.0054	$ 0.18
	374	Apr	0.075	28.05	0.0054	$ 0.15
	374	May	0.07	26.18	0.0054	$ 0.14
	374	Jun	0.064	23.936	0.0054	$ 0.13
	374	Jul	0.067	25.058	0.0054	$ 0.14
	374	Aug	0.073	27.302	0.0054	$ 0.15
	374	Sep	0.079	29.546	0.0054	$ 0.16
	374	Oct	0.091	34.034	0.0054	$ 0.18
	374	Nov	0.098	36.652	0.0054	$ 0.20
	374	Dec	0.104	38.896	0.0054	$ 0.21
Total				**374**		**$ 2.02**

Light Size/Type	Annual kWh	Month	Usage Factor	Monthly kWhs	X $0.0054	Increase Amount
16,000 Lumen-High Pressure Sodium	694	Jan	0.103	71.482	0.0054	$ 0.39
	694	Feb	0.089	61.766	0.0054	$ 0.33
	694	Mar	0.087	60.378	0.0054	$ 0.33
	694	Apr	0.075	52.05	0.0054	$ 0.28
	694	May	0.07	48.58	0.0054	$ 0.26
	694	Jun	0.064	44.416	0.0054	$ 0.24
	694	Jul	0.067	46.498	0.0054	$ 0.25
	694	Aug	0.073	50.662	0.0054	$ 0.27
	694	Sep	0.079	54.826	0.0054	$ 0.30
	694	Oct	0.091	63.154	0.0054	$ 0.34
	694	Nov	0.098	68.012	0.0054	$ 0.37
	694	Dec	0.104	72.176	0.0054	$ 0.39
Total				**694**		**$ 3.75**

Light Size/Type	Annual kWh	Month	Usage Factor	Monthly kWhs	X $0.0054	Increase Amount
27,500 Lumen High-Pressure Sodium	1271	Jan	0.103	130.913	0.0054	$ 0.71
	1271	Feb	0.089	113.119	0.0054	$ 0.61
	1271	Mar	0.087	110.577	0.0054	$ 0.60
	1271	Apr	0.075	95.325	0.0054	$ 0.51
	1271	May	0.07	88.97	0.0054	$ 0.48
	1271	Jun	0.064	81.344	0.0054	$ 0.44
	1271	Jul	0.067	85.157	0.0054	$ 0.46
	1271	Aug	0.073	92.783	0.0054	$ 0.50
	1271	Sep	0.079	100.409	0.0054	$ 0.54
	1271	Oct	0.091	115.661	0.0054	$ 0.62
	1271	Nov	0.098	124.558	0.0054	$ 0.67
	1271	Dec	0.104	132.184	0.0054	$ 0.71
Total				**1271**		**$ 6.86**

APPENDIX B

SPL-Municipal Street Lighting

Light Size/Type	Annual kWh	Month	Usage Factor	Monthly kWhs	X $0.0054	Increase Amount
50,000 Lumen High-Pressure Sodium	1880	Jan	0.103	193.64	0.0054	$ 1.05
	1880	Feb	0.089	167.32	0.0054	$ 0.90
	1880	Mar	0.087	163.56	0.0054	$ 0.88
	1880	Apr	0.075	141	0.0054	$ 0.76
	1880	May	0.07	131.6	0.0054	$ 0.71
	1880	Jun	0.064	120.32	0.0054	$ 0.65
	1880	Jul	0.067	125.96	0.0054	$ 0.68
	1880	Aug	0.073	137.24	0.0054	$ 0.74
	1880	Sep	0.079	148.52	0.0054	$ 0.80
	1880	Oct	0.091	171.08	0.0054	$ 0.92
	1880	Nov	0.098	184.24	0.0054	$ 0.99
	1880	Dec	0.104	195.52	0.0054	$ 1.06
Total				**1880**		**$ 10.15**

Light Size/Type	Annual kWh	Month	Usage Factor	Monthly kWhs	X $0.0054	Increase Amount
130,000 High-Pressure Sodium	4313	Jan	0.103	444.239	0.0054	$ 2.40
	4313	Feb	0.089	383.857	0.0054	$ 2.07
	4313	Mar	0.087	375.231	0.0054	$ 2.03
	4313	Apr	0.075	323.475	0.0054	$ 1.75
	4313	May	0.07	301.91	0.0054	$ 1.63
	4313	Jun	0.064	276.032	0.0054	$ 1.49
	4313	Jul	0.067	288.971	0.0054	$ 1.56
	4313	Aug	0.073	314.849	0.0054	$ 1.70
	4313	Sep	0.079	340.727	0.0054	$ 1.84
	4313	Oct	0.091	392.483	0.0054	$ 2.12
	4313	Nov	0.098	422.674	0.0054	$ 2.28
	4313	Dec	0.104	448.552	0.0054	$ 2.42
Total				**4313**		**$ 23.29**

Light Size/Type	Annual kWh	Month	Usage Factor	Monthly kWhs	X $0.0054	Increase Amount
12,000 Lumen Metal Halide	696	Jan	0.103	71.688	0.0054	$ 0.39
	696	Feb	0.089	61.944	0.0054	$ 0.33
	696	Mar	0.087	60.552	0.0054	$ 0.33
	696	Apr	0.075	52.2	0.0054	$ 0.28
	696	May	0.07	48.72	0.0054	$ 0.26
	696	Jun	0.064	44.544	0.0054	$ 0.24
	696	Jul	0.067	46.632	0.0054	$ 0.25
	696	Aug	0.073	50.808	0.0054	$ 0.27
	696	Sep	0.079	54.984	0.0054	$ 0.30
	696	Oct	0.091	63.336	0.0054	$ 0.34
	696	Nov	0.098	68.208	0.0054	$ 0.37
	696	Dec	0.104	72.384	0.0054	$ 0.39
Total				**696**		**$ 3.76**

APPENDIX B

SPL-Municipal Street Lighting						
	Annual		Usage	Monthly		Increase
Light Size/Type	kWh	Month	Factor	kWhs	X $0.0054	Amount
20,500 Lumen Metal Halide	1020	Jan	0.103	105.06	0.0054	$ 0.57
	1020	Feb	0.089	90.78	0.0054	$ 0.49
	1020	Mar	0.087	88.74	0.0054	$ 0.48
	1020	Apr	0.075	76.5	0.0054	$ 0.41
	1020	May	0.07	71.4	0.0054	$ 0.39
	1020	Jun	0.064	65.28	0.0054	$ 0.35
	1020	Jul	0.067	68.34	0.0054	$ 0.37
	1020	Aug	0.073	74.46	0.0054	$ 0.40
	1020	Sep	0.079	80.58	0.0054	$ 0.44
	1020	Oct	0.091	92.82	0.0054	$ 0.50
	1020	Nov	0.098	99.96	0.0054	$ 0.54
	1020	Dec	0.104	106.08	0.0054	$ 0.57
Total				**1020**		**$ 5.51**
	Annual		Usage	Monthly		Increase
Light Size/Type	kWh	Month	Factor	kWhs	X $0.0054	Amount
36,000 Lumen Metal Halide	1620	Jan	0.103	166.86	0.0054	$ 0.90
	1620	Feb	0.089	144.18	0.0054	$ 0.78
	1620	Mar	0.087	140.94	0.0054	$ 0.76
	1620	Apr	0.075	121.5	0.0054	$ 0.66
	1620	May	0.07	113.4	0.0054	$ 0.61
	1620	Jun	0.064	103.68	0.0054	$ 0.56
	1620	Jul	0.067	108.54	0.0054	$ 0.59
	1620	Aug	0.073	118.26	0.0054	$ 0.64
	1620	Sep	0.079	127.98	0.0054	$ 0.69
	1620	Oct	0.091	147.42	0.0054	$ 0.80
	1620	Nov	0.098	158.76	0.0054	$ 0.86
	1620	Dec	0.104	168.48	0.0054	$ 0.91
Total				**1620**		**$ 8.75**
	Annual		Usage	Monthly		Increase
Light Size/Type	kWh	Month	Factor	kWhs	X $0.0054	Amount
110,000 Lumen Metal Halide	4056	Jan	0.103	417.768	0.0054	$ 2.26
	4056	Feb	0.089	360.984	0.0054	$ 1.95
	4056	Mar	0.087	352.872	0.0054	$ 1.91
	4056	Apr	0.075	304.2	0.0054	$ 1.64
	4056	May	0.07	283.92	0.0054	$ 1.53
	4056	Jun	0.064	259.584	0.0054	$ 1.40
	4056	Jul	0.067	271.752	0.0054	$ 1.47
	4056	Aug	0.073	296.088	0.0054	$ 1.60
	4056	Sep	0.079	320.424	0.0054	$ 1.73
	4056	Oct	0.091	369.096	0.0054	$ 1.99
	4056	Nov	0.098	397.488	0.0054	$ 2.15
	4056	Dec	0.104	421.824	0.0054	$ 2.28
Total				**4056**		**$ 21.90**

APPENDIX C

Examples of natural termination of the IEC on October 1, 2003 and two (2) months processing time.

Assumptions:	Prime rate at October 1, 2003	9.00%
	Actual retail Missouri jurisdictional sales (MWH)	7,600,000

First example. Actual F&PP expense falls within the base and forecast, resulting in a partial refund.

Total IEC charged to customers ($0.0054/kWh X sales)	$ 41,040,000	"A"
Base Fuel and Purchase Power ($25.20/MWH X sales)	191,520,000	"B"
Actual retail Missouri jurisdictional fuel and purchase power	228,000,000	"C"
Amount to be refunded prior to interest (A+B-C) *	4,560,000	"D"
Interest for the period (D X 9%)	410,400	"E"
Interest following expiration (9% / 12 X 2) X D))	68,400	"F"
Total to be refunded (D +E + F)	5,038,800	"G"
Refund expressed as a percentage (G / A)	12.28%	
Interest portion of refund expressed as a percentage ((F + E) / A)	1.17%	

Customer X paid $100 under the IEC. His specific refund is $12.28 (of which $1.17 is interest) plus applicable taxes.

* Refund amount cannot exceed "A" and must be positive.

APPENDIX C

Second example. Actual F&PP expense falls below the base, resulting in a full refund.

Total IEC charged to customers ($0.0054/kWh X sales)	$ 41,040,000	"A"
Base Fuel and Purchase Power ($25.20/MWH X sales)	191,520,000	"B"
Actual retail Missouri jurisdictional fuel and purchase power	190,000,000	"C"
Amount to be refunded prior to interest (A+B-C) *	41,040,000	"D"
Interest for the period (D X 9%)	3,693,600	"E"
Interest following expiration (9% / 12 X 2) X D))	615,600	"F"
Total to be refunded (D +E + F)	45,349,200	"G"
Refund expressed as a percentage (G / A)	110.50%	
Interest portion of refund expressed as a percentage ((F + E) / A)	10.50%	

Customer X paid $100 under the IEC. His specific refund is $110.50 (of which $10.50 is interest) plus applicable taxes.

* Refund amount cannot exceed "A" and must be positive.

APPENDIX C

Third example. Actual F&PP expense exceeds the sum of the base and IEC, resulting in no refund.

Total IEC charged to customers ($0.0054/kWh X sales)	$ 41,040,000	"A"
Base Fuel and Purchase Power ($25.20/MWH X sales)	191,520,000	"B"
Actual retail Missouri jurisdictional fuel and purchase power	235,000,000	"C"
Amount to be refunded prior to interest (A+B-C) *	-	"D"
Interest for the period (D X 9%)	-	"E"
Interest following expiration (9% / 12 X 2) X D))	-	"F"
Total to be refunded (D +E + F)	-	"G"
Refund expressed as a percentage (G / A)	0.00%	
Interest portion of refund expressed as a percentage ((F + E) / A)	0.00%	

Customer X paid $100 under the IEC. His specific refund is $0.00.

* Refund amount cannot exceed "A" and must be positive.