(314) 554-2552

UNION ELECTRIC

January 4, 1991

Mr. Charles Brent Stewart
Interim Executive Secretary
Missouri Public Service Commission
P.O. Box 360
Jefferson City, Mo. 65102

Dear Mr. Stewart:

Enclosed, for filing with the Commission, are the original and fourteen (14) copies of the following:

(1) Application of Union Electric Company for Variance from Promotional Practices Rule for Good Cause Shown and for Approval of Promotional Practices Sheets, and Supporting Affidavit of Stephen M. Kidwell

(2) Revisions to the Company's current Promotional Practices, which revisions are the subject matter of the Application:

4th Revised Sheet No. 1
Original Sheet No. 10

These sheets bear an issue date of January 7, 1991. Company requests approval effective February 6, 1991, pursuant to Company's request for an expedited handling of its request for variance.

Copies of this Application have been served on all parties specified under 4 CSR 240-14, as shown on the attached Certificate of Service.

Please acknowledge receipt of this filing by returning a copy of this letter bearing the Commission's filed notations.

Very truly yours,

Michael F. Barnes

Michael F. Barnes
Attorney

cc: Public Counsel

FILED
JAN 7 1991
PUBLIC SERVICE COMMISSION

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

Application of Union Electric Company for Variance from Promotional Practices Rule for Good Cause Shown and for Approval of Promotional Practices Sheets	)))))	EO-91-244

Application of Union Electric Company for Variance from Promotional Practices Rule for Good Cause Shown and for Approval of Promotional Practices Sheets

COMES NOW Union Electric Company ("UE" or "Company") and, pursuant to Rules 4 CSR 240-2.060 and 4 CSR 240-14.010(2), requests a variance from the Commission's promotional practices rule for good cause shown, and approval of promotional practices sheets, as follows:

1. Union Electric Company is a Missouri corporation duly organized and existing under the laws of the State of Missouri, with its principal place of business located at 1901 Chouteau, St. Louis, Mo. 63103. It engages in the business of supplying electricity in parts of Missouri and elsewhere.

2. Communications in regard to this Application should be addressed to:

Michael F. Barnes
Attorney
Union Electric Company
P.O. Box 149
St. Louis, Mo. 63166

3. Pursuant to Commission Rule 4 CSR 240-14.010(2), as amended effective October 1, 1988, UE files this Application for a variance from the rules contained in Chapter 14, for good cause shown. The promotional practice proposed by Company is generally

described in paragraph 4 below, and more particularly described in Attachment 1, the Affidavit of Stephen M. Kidwell, which is attached hereto and made a part hereof. The "good cause" basis for the Application is generally described in paragraph 5 below, and more particularly described in Attachment 1.

4. Company proposes a research program, the "Energy Efficient Lighting Research Program," that would be limited in geographical area, in budget and in duration.

a. The purposes of the program are twofold. The first is to test the cost-effectiveness of offering incentives to commercial or industrial customers for the installation of specific energy efficient lighting technologies, using intermediaries as the primary means of program promotion. The second is to gain a better understanding of the magnitude of the resource available in improved lighting efficiency, and the costs and benefits of acquiring that resource.

b. The research program will run from early 1991 to no later than November 30, 1991.

c. The program is limited to UE commercial and industrial customers, for facilities located in St. Louis City and the Missouri counties of Franklin, Jefferson, St. Charles and St. Louis.

d. The program consists of a Company rebate of $10 per ballast paid directly to commercial or industrial customers who retrofit or replace existing fluorescent lighting with certain

types of electronic ballasts and fluorescent lamps. New construction is not included in the program.

e. The rebate will be issued to the equipment warranty holder upon confirmation of installation.

f. The program will terminate based on the earlier of budgeted dollars spent (up to $100,000) or the November 30, 1991, deadline.

5. Company believes sufficient good cause exists for the Commission to grant this variance.

a. The variance is for a research program that is limited in geographical area, budget, scope and duration.

b. The two purposes of the program are mentioned in paragraph 4.(a) above and are set forth in more detail in Attachment 1 herein. The Company will compile data and then judge the effectiveness of the program elements. If UE, based on the research program, decides to conduct another research program, or to conduct a system-wide lighting rebate program, it will, of course, seek prior Commission approval.

c. There is no fuel that competes with electricity to supply the end-use targeted by the program.

d. Company believes everyone concerned will benefit from the research program:

1. Customers who take advantage of the research

program will benefit through energy savings as well as through the rebate, which will help offset the higher initial cost of the higher efficiency lighting system.

2. If the program were to be pursued on a sustained, system-wide basis, customers who do not participate could also benefit because energy efficiency measures encouraged through the rebate could be cheaper to acquire than additional generating equipment.

3. The Company will be able to test the cost-effectiveness of this promising method of encouraging energy efficiency in lighting. Lighting is a significant contributor to the peak demand of many businesses, therefore increased efficiency in this area may help the Company to defer future additional generating capacity.

4. Exhibit 1, attached to and made of part of Mr. Kidwell's Affidavit, provides a discussion of program benefits to the participating customer and to the utility.

e. Company stresses the ultimate goal of the program is not the increased use of electric energy, but rather the more efficient use of electric energy.

6. Company requests the Commission give an expedited review to the Application, and further suggests no hearing is necessary.

a. UE would like to begin active promotion of the

research program in early 1991.

b. The attached Affidavit of Stephen M. Kidwell sufficiently sets forth the facts and circumstances of the program, so that the Commission can make its decision without holding a hearing.

c. UE again stresses the program is in the nature of a research program, with a limited budget, duration and geographical scope.

7. Company has enclosed Union Electric promotional practices sheets Nos. 4th Revised No. 1 and Original No. 10, which set forth the energy efficient lighting research program.

In addition to granting the variance herein applied for, UE requests the Commission approve the attached Union Electric promotional practices sheet Nos. 4th Revised No. 1 and Original No. 10.

WHEREFORE, for the reasons hereinbefore stated, Union Electric Company requests that this Commission (a) grant the variance herein applied for, as soon as practicable, and (b) approve the Company's promotional practices sheet Nos. 4th Revised No. 1 and Original No. 10.

Respectfully submitted,

UNION ELECTRIC COMPANY

Dated: January 4, 1991

By Michael F. Barnes

Michael F. Barnes
Attorney for
Union Electric Company
P.O. Box 149
St. Louis, Mo. 63166
(314) 554-2552

VERIFICATION

Michael F. Barnes, being first duly sworn, states that he is an attorney for Union Electric Company, that he is authorized to submit this application, and that the facts stated therein are correct to the best of his information and belief.

Michael F. Barnes

Subscribed and sworn to before me this 4th day of January, 1991.

DEBORAH L. CLARK
NOTARY PUBLIC - STATE OF MISSOURI
ST. LOUIS COUNTY
MY COMMISSION EXPIRES APR. 18, 1994

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing Application was served on the following, by first class mail, postage prepaid, on this 4th day of January, 1991.

Michael F. Barnes

Michael F. Barnes

Mr. Lee Liberman
Chairman of the Board
Laclede Gas Company
720 Olive Street
St. Louis, Mo. 63101

Mr. Rodes S. Hood
President
Bowling Green Gas Company
16 South Court Street
Bowling Green, Mo. 63334

Mr. Frederick K. Little
President
Missouri Public Service Company
10700 East 350 Highway
Kansas City, Mo. 64138

Sho-Me Power Corporation
301 West Jackson
Marshfield, Mo. 65706

Mr. L.R. Young, President
Osage Natural Gas Company
210 A West Main Street
Salem, IL 62881

Mr. Dan Brown
Cuivre River Electric Service Company
1732 Prospect Road
P.O. Box 508
Wentzville, Mo. 63385

Mr. L. Thurl McSpadden
President
Associated Natural Gas Co.
405 West Park Street
Blytheville, AR 72315

Mr. John E. Hayes, Jr.
President
KPL Gas Service
818 Kansas Avenue
P.O. Box 889
Topeka, KS 66612

Mr. James Dickherber
O'Fallon Gas Service, Inc.
618 Woodlawn Avenue
O'Fallon, Mo. 63366

Mr. C.B. Duschane III
United Cities Gas Company
10th & Johnson Streets
Keokuk, IA 52632

Ms. Martha Hogerty
Office of the Public Counsel
P.O. Box 7800
Jefferson City, Mo. 65102

UNION ELECTRIC COMPANY

PROMOTIONAL PRACTICES

Applying to ALL MISSOURI SERVICE AREAS

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*Indicates change
**Indicates addition

UNION ELECTRIC COMPANY

PROMOTIONAL PRACTICES

Applying to ALL MISSOURI SERVICE AREAS

ENERGY EFFICIENT LIGHTING RESEARCH PROGRAM

This research program is available only to commercial and industrial electric customers for facilities located in St. Louis City and the counties of Franklin, Jefferson, St. Charles and St. Louis.

Company will give a rebate of $10 per ballast paid directly to customers who retrofit or replace existing fluorescent lighting with certain types of electronic ballasts and fluorescent lamps. New construction is not included in the program. The rebate will be issued to the equipment warranty holder upon confirmation of installation. Customers must purchase a minimum of 100 ballasts in order to qualify, and rebates will be limited to $5,000 per customer.

Publicity will be given to this program primarily through intermediaries, such as lighting distributors and electrical contractors. Company will develop an informational brochure for customers.

The program will begin in early 1991 and will terminate on the earlier occurrence of: (1) budgeted dollars spent; or (2) November 30, 1991.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

Application of Union Electric Company	)
for Variance from Promotional Practices	)
Rules for Good Cause Shown and for	)
Approval of Promotional Practices Sheets	)

STATE OF MISSOURI	)
	) **SS**
CITY OF ST. LOUIS	)

Affidavit of Stephen M. Kidwell

Background

My name is Stephen M. Kidwell, and I reside in St. Louis City. I have been employed by Union Electric Company (Company) since February 1987. Since March 1988 my position has been Engineer, Demand-Side Planning, in the Company's Corporate Planning Department. In my present position, my responsibilities include the design and coordination of research assessing the potential cost-effectiveness of demand-side management (DSM) programs for commercial customers. My responsibilities include the design and coordination of the research program in this case, the "Energy Efficient Lighting Research Program".

Description of the Program

The Company wishes to conduct research concerning customer incentives for the purchase of energy efficient fluorescent lighting. The research program will begin in early 1991 and conclude no later than November 30, 1991. Rebates will be offered to

commercial and industrial customers, for facilities located in St. Louis City and the counties of Franklin, Jefferson, St. Charles and St. Louis. (Company also plans to offer rebates in the Illinois portion of its metropolitan St. Louis service territory.)

Company will pay a rebate of $10 per ballast directly to commercial or industrial customers who retrofit or replace existing fluorescent lighting with electronic ballasts and T8 fluorescent lamps. Customers must purchase a minimum of 100 ballasts in order to qualify. In addition, rebates will be limited to $5,000 per Union Electric customer. The rebate will be issued to the equipment warranty holder upon confirmation of installation.

The intent of these restrictions is to focus on a specific segment of the lighting market, namely small- to intermediate-sized existing business or institutional facilities. New construction is not included in this program.

T8 lamps are more energy efficient than standard lamps and have improved color rendering properties while providing the same light output (lumens). In addition, these lamps require ballasts with different operating characteristics. These "dedicated" ballasts can operate only T8 lamps, providing Union Electric with some assurance of persistence in demand and energy savings. Only dedicated electronic ballasts qualify for a rebate.

Company has two reasons for selecting the St. Louis area as the research site. First, the program will rely heavily on intermediaries, such as lighting distributors and electrical contractors, for identification and recruitment of participants. St. Louis has a strong network of such intermediaries upon which to test this method of program delivery. In addition, a significant portion of the Company's commercial and industrial customers are concentrated in this area.

A list of qualifying lamps and ballasts will be furnished to customers through intermediaries making sales contacts. Equipment known to qualify is listed below:

LAMPS

General Electric	Philips	Sylvania
F25T8	FO25	FO25
F32T8	FO32	FBO24
F40T8	FO40	FO32
		FBO31
		FO40
		FBO40

BALLASTS

Advance	Triad-Utrad	Valmont
REL-3P32-TP	B-232I120	E232SR120
VEL-3P32-TP	B-232I277	E232SR277
REL-4P32-TP	B-332I120	E332PI120
VEL-4P32-TP	B-332I277	E332PI277
	B-432I120	E332SR120
	B-432I277	E332SR277
		E432PI120
		E432PI277

These are the types of qualifying T8 lamps and dedicated electronic ballasts known to be available in the St. Louis area. Additional T8 lamps or dedicated electronic ballasts may be approved at the Company's discretion.

The Company has budgeted a maximum of $100,000 for the research program. The program will terminate when these dollars are spent or no later than November 30, 1991, whichever occurs first. The budget figure includes rebates, promotional materials, meetings with participating intermediaries, developing forms and procedures, evaluating the program, and publishing reports and recommendations.

The Company has informally contacted intermediaries, providing a preliminary outline of the program and seeking advice concerning specifics of program design. Through these discussions and a study of similar programs conducted by other utilities, the Company is developing forms and procedures for program administration. These include an informational brochure for customers, an application for the reservation of rebate funds, a rebate application form, survey questions to be included on the applications, an identification and survey procedure for nonparticipants, and procedures for obtaining sales information from participating intermediaries.

The Company intends to initiate the program in early 1991, immediately upon receiving appropriate regulatory approvals. The program is expected to be completed during the third quarter of 1991. The Company plans to publish its evaluation of the program by December 1991.

Purpose of the Program

The purposes of the program are as follows:

1. To test the cost-effectiveness of offering incentives to commercial or industrial customers for the installation of specific energy efficient lighting technologies, using intermediaries as the primary means of program promotion. The Company believes that learning how to work through intermediaries to influence customer choices is a critical step in the process of designing effective demand-side programs. Information gained from this research will further the Company's knowledge of the benefits, as well as the limitations, of using this delivery mechanism.

2. To gain a better understanding of the magnitude of the resource available in improved lighting efficiency, and the costs and benefits of acquiring that resource. Analysis of costs and benefits is dependent not only on assessment of the physical impacts of a program, such as changes in customer demand or energy usage, but also on expectations concerning customer behavior. Aspects of behavior important to program design include customer investment criteria, program acceptance rates and free-riders. The research program is designed to

yield additional insights into both the physical and behavioral parameters important to program development and resource planning.

The Company has been intentionally selective in designing the specifications of the program. Among the wide variety of lighting products available which claim energy efficiency benefits, T8 lamps and dedicated electronic ballasts provide the greatest assurance of persistence in energy savings. Such products provide potential value to the utility as well as the customer.

The Company is aware of lighting rebate programs conducted by utilities in other jurisdictions. To our knowledge, no investor-owned electric utility in Missouri has offered such a program. The Company believes that delivery mechanisms must be field tested on its own system prior to full implementation. Depending on the results of this program, the Company may decide to: (1) seek permission to conduct another, revised research program, (2) seek permission to conduct a system-wide program, or (3) defer additional programs for energy efficient lighting, but continue examining alternative program designs.

Benefits of the Program

As noted above, the Company hopes to test the cost-effectiveness of this promising method of encouraging energy efficiency in lighting. Lighting is a significant contributor to the peak demand of many businesses, therefore increased efficiency in this area may help the Company to defer future additional generating capacity.

Customers who take advantage of the research program will benefit through energy savings as well as through the rebate which will help offset the higher initial cost of the higher efficiency lighting system.

If the program were to be pursued on a sustained, system-wide basis, customers who do not participate could also benefit because energy efficiency measures encouraged through the rebate could be cheaper to acquire than additional generating equipment.

Exhibit 1, attached hereto and made a part of this Affidavit, provides a discussion of program benefits to the participating customer and to the utility.

Good Cause

The promotional practices rule, as amended, allows the Commission to grant a variance from the requirements and prohibitions of the rule "for good cause shown." The Company believes "good cause" exists in this case for such a variance.

As noted above, the variance is for a research program that is limited in geographical area, budget, scope and duration. In addition, there is no fuel which competes with electricity to supply the end-use targeted by the program. Finally, the ultimate goal of the proposed promotional practice is not the increased use of electric energy, but rather the more efficient use of electric energy.

For some years the Company has been evaluating, through computer studies and research programs, many load management and conservation options as alternatives to generating capacity. As a result of these studies, commercial lighting has been preliminarily identified as a cost-effective resource option in the Company's 1990 Energy Resource Plan. The next step in evaluating the potential resource is to gain practical experience in the marketplace. It is essential that this research program begin as soon as possible.

The Company's Application includes UE Promotional Practices Sheet Nos. 4th Revised No. 1 and Original No. 10, which set forth the lighting research program. The text of Sheet Original No. 10 indicates the limited scope, budget and duration of the program, with an end date no later that November 30, 1991.

I have reviewed Sheet Nos. 4th Revised No. 1 and Original No. 10, and I believe their content adequately sets forth the principal features of the proposed program.

The contents of this affidavit, including Exhibit 1, are true and correct to the best of my knowledge, information and belief.

Further affiant sayeth not.

Stephen M. Kidwell

Subscribed and sworn to before me this 4th day of January, 1991.

DEBORAH L. CLARK
NOTARY PUBLIC - STATE OF MISSOURI
ST. LOUIS COUNTY
MY COMMISSION EXPIRES APR. 18, 1994

REBATE DETERMINATION
ENERGY EFFICIENT LIGHTING RESEARCH PROGRAM

The rebate amount specified for the program has been based on three criteria:

1) Offering a rebate which is comparable to those offered by other Midwestern utilities for similar equipment.

2) Providing the customer with a significant decrease in payback period.

3) Establishing a reasonable value for future capacity and energy expenditures potentially avoided by the program.

The base system used to estimate customer economics and compare rebates offered by other utilities was a 4-foot fixture fitted with four 40-watt standard bulbs and an energy-saving magnetic ballast.[1] For a retrofit with four T8 lamps and a dedicated electronic ballast, rebates available from a sample of Midwestern investor-owned utilities ranged from a low of $7 to a high of more than $20. The average rebate was approximately $12.

Based on test data from manufacturers and other sources, the power requirement for the base system would average 162 watts.[2,3] The T8/electronic ballast system power requirement would be approximately 110 watts for a savings of about 52 watts per fixture. Assuming an average of 3500 hours of operation per year, this translates into annual savings of 182 kWh per fixture.

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[1]This system is a common standard for comparison. For example, see Nadel & Geller, Lamp Efficiency Standards for Massachusetts: Analysis and Recommendations, American Council for an Energy Efficient Economy, June 1989, page 69.

[2]Sylvania Engineering Bulletin O-362, Octron & Octron Curvalume Fluorescent Lamps, p. 7.

[3]Howard S. Geller, 1988 Lighting Ballast Efficiency Standards: Analysis of Electricity and Economic Savings, American Council for an Energy Efficient Economy, August 1988, p.2.

The reduction in power to the fixture also lowers cooling requirements for the space. Estimates of the reduction in cooling requirements vary between 10% and 40% of the lighting energy savings, depending on the characteristics of the building being analyzed.[4,5] In this analysis, an additional 28 kWh per fixture (about 15%) is assumed. Based on the Company's current Missouri Small General Service rate, annual savings to the customer are estimated to be approximately $15 per fixture.[6]

Based on recent local price quotes and additional national sources, the installed cost of the electronic ballast and T8 lamps is expected to be about $32 per fixture.[7] This yields a simple payback of 2.1 years. With the rebate from Union Electric, the payback period decreases to 1.5 years.

In order to estimate the value of demand savings to the utility, savings at the customer meter must be adjusted for several factors, including line losses, reserve requirements and coincidence with system peak demand. In addition, capacity equivalence must be considered.[8]

The following values were assumed in determining the capacity value of the estimated reduction in customer demand:

Customer Savings: 60 watts (52 watts lighting, 8 watts cooling)

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[4]Alden M. Hathaway II, "Lighting Efficiency: A Simple Solution to a Complex Problem", Public Utilities Fortnightly, Vol. 125 No. 13, June 21, 1990, p.26.

[5]Electric Power Research Institute, Technical Assessment Guide, EPRI P-4463-SR, Vol. 2, Part 2, October 1988, page 3-19.

[6]Savings for Large General Service customers may be less, depending on several factors, including the load factor of the facility, lighting operating hours and cooling and heating requirements. In some applications, the customer may incur additional costs for heating. This factor is expected to have minimal impact on the typical installation targeted by this program.

[7]See material referenced at notes 1, 3 and 5 (page 6-36). The estimate includes labor costs to retrofit an existing fixture. Labor costs for fixture replacement would be substantially higher.

[8]For a discussion of capacity equivalence calculations, see the Integrated Resource Analysis Report, Union Electric Company, January 1990, pp. 22-24.

Reserve Multiplier:	1.18
Loss Multiplier:	1.1013
Coincidence Factor:	0.9
Capacity Equivalence Factor:	0.7

Capacity Value = 60 x 1.18 x 1.1013 x 0.9 x 0.7 = 49 watts

(NOTE: This is a rough estimate of the value of avoided future capacity requirements. A a research program of this size is unlikely to impact capacity planning. Only a full-scale, system-wide program has the potential to affect the selection and timing of capacity additions.)

The 1991 present value of avoided capacity was calculated to be $389 per kilowatt.[9] Assuming an avoided capacity of 49 watts, this equates to $19 per fixture. If energy savings are included, the value increases to $67.[10] This is the gross value of energy and capacity savings to the utility, before accounting for rebates, administration, monitoring, evaluation and any other program costs.

This analysis has not comprehensively examined the costs and benefits of either a full-scale lighting program or the construction and operation of a combustion turbine. A purpose of the research program, as previously stated, is to gain a better understanding of the costs and benefits of offering a lighting rebate program to customers. If the results of the research program are favorable, a more rigorous analysis will be performed to assess program cost-effectiveness.

The program appears to meet the three criteria previously defined. The rebate is comparable to those offered by other investor-owned utilities for similar equipment, the reduction in customer payback period is significant, and the rebate level seems to compare favorably to the value of energy and capacity savings.

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[9]Union Electric Company, Capital Expenditure Justification Manual, April 9, 1990, pages D-1 and B-4.

[10]Capital Expenditure Justification Manual, pages C-1 to C-3.