Exhibit No.
Issue: Lead/Lag Study,
Cash Working Capital
Witness: Kelly A. Emanuel
Type of Exhibit: Direct Testimony
Sponsoring Party: Empire District Electric
Case No.
Date to Be Filed: October 2009

Before the Public Service Commission
of the State of Missouri

Direct Testimony

of

Kelly A. Emanuel

October 2009

EMPIRE
SERVICES YOU COUNT ON

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OF
KELLY A. EMANUEL
ON BEHALF OF
THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE
PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

DIRECT TESTIMONY
OF
KELLY A. EMANUEL
THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE
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OF THE STATE OF MISSOURI
CASE NO.

INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. Kelly A. Emanuel. My business address is 602 S. Joplin Avenue, Joplin, Missouri.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. The Empire District Electric Company ("Empire" or "Company"), as a Regulatory Analyst.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND FOR THE COMMISSION.

A. I hold a Bachelor of Science degree in Business Information Systems from the University of Phoenix. I began my career in accounting and worked up to the positions of Branch Accounting and Human Resources Manager for the Marriott Corporation. I also served as Director of Finance for a manufacturing company, Shaffer Sportswear. I combined my accounting and finance experience into the Information Systems field where I worked in several areas. In 2006, I joined Empire as an Internal Auditor. In 2008, I moved into my current position of Regulatory Analyst. I have previously provided testimony before the Missouri Public Service Commission on behalf of The Empire District Gas Company, in Case No. GR-2009-0434.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS CASE?

A. My testimony will describe Empire's Cash Working Capital requirements based upon the lead lag study used in calculating the Cash Working Capital requirement for the test year (the twelve months ending June 30, 2009), and a proposed tariff change related to the Meter Treater program.

LEAD/LAG STUDY

Q. WHAT IS A LEAD/LAG STUDY AND HOW IS IT USED?

A. A lead/lag study is a method used to calculate the cash working capital requirements necessary to meet the ongoing operating needs of a utility company. The results of a lead/lag study are one component used in the determination of a company's rate base.

Q. HOW DOES A LEAD/LAG STUDY MEASURE THE AMOUNT OF CASH REQUIRED TO MEET OPERATING EXPENSE?

A. A lead/lag study measures the difference between (1) the time a service is rendered until the time revenues for that service are received (lag), and (2) the time that services, materials, etc. are obtained and the time expenditures for those services are made (lead). The applicable lead period for each major category of expense is compared to the revenue lag period. The difference between those periods, expressed in days, multiplied by the average daily operating expense provides the amount of cash working capital required.

Q. HOW WAS THE TEST YEAR AVERAGE REVENUE LAG DAYS DETERMINED?

A. Revenue Lag is the total of 3 components: the usage lag, the billing lag, and the payment lag. How each of these lags is calculated is explained in Schedule KAE-1.

Q. PLEASE DESCRIBE THE METHODS USED TO DETERMINE THE EXPENSE LEADS?

A. The expense lead days were determined by compiling actual data for the same time period for each of the following categories:

- Fuel Expenses – Gas, Coal and Oil
- Purchased Power Expense
- Payroll Expenses
- Benefits Expenses
- FICA Employee Withholding and Employer Match
- Federal Income Tax Withheld
- State Income Tax Withheld
- 401K
- Other Operation and Maintenance Expenses
- Property Taxes
- Federal Unemployment Taxes
- State Unemployment Taxes
- Use Tax
- Sales Tax

Each of these components and the related methodology used in the lead/lag study are discussed in detail in the 2009 Lead-Lag Study for Missouri Electric Operations, which is presented in Schedule KAE-1, attached to my testimony.

Q. WHAT WERE THE RESULTS OF THE LEAD/LAG STUDY?

A. Schedule KAE-1, page 11, shows the calculations for average lead days for the expense categories. The average lag days are also shown on Schedule KAE-1, pages 2, 3 and 4,

for each component Usage (15.28 days), Billing (4.14 days), and Payment (29.46 days) for a total lag of 48.88 days.

CASH WORKING CAPITAL

Q. HOW ARE THE RESULTS OF THE LEAD/LAG STUDY USED TO CALCULATE THE REQUIRED CASH WORKING CAPITAL FOR THE TEST YEAR?

A The lead time for the various expense categories, as listed in Schedule KAE-1 page 11, is subtracted from the total lag time to achieve the total Cash Working Capital Lag. Next, a Cash Working Capital Factor is calculated by dividing the Cash Working Capital Lag by 365 (total number of days in the test year) for a daily lag. The daily lag factor is then used to calculate the required cash for that expense category by multiplying the daily factor by the test year total expenses for that category.

Q. WHAT WAS THE RESULT OF YOUR WORKING CAPITAL CALCULATIONS?

A. The result was a total increase in Empire's ratebase in the amount of $20,032,030 associated with necessary working capital.

METER TREATERS

Q. IS EMPIRE RECOMMENDING ANY TARIFF CHANGES NOT RELATED TO RATE DESIGN?

Yes, Empire is proposing to delete Schedule OS P.S.C. MO. No. 5, Section 3, Sheet No. 6, and Schedule OS-MT, P.S.C. MO. No. 5 Section 3, Sheet Nos. 7, 8, and 9.

Q. WHY IS EMPIRE RECOMMENDING THIS DELETION?

The Meter Treater program has been in place since March 27, 2005 and has been utilized

by less than 1% of Empire's customer base (.1055%). The program required installation of a surge suppressor product to the customer meter and requires that the unit be replaced every 10 years. The program includes insurance coverage for damages to motor driven appliances, such as washers, dryers, and refrigerators, but does not for damages to electronic equipment. Since the plan has been in place, there have been no claims against this program. Instead of investing the time and capital required to replace the surge protectors and continue the insurance coverage, Empire is recommending eliminating the above referenced tariff sheets and discontinuing the program all together.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A Yes, it does.

The Empire District Electric Company

Lead/Lag Study
For Missouri Electric Operations

For the Year Ending June 30, 2009

Purpose. A lead/lag study is performed to determine the cash working capital component necessary to compute the working capital portion of rate base. The remaining components of working capital, such as the investment in materials and supplies, electric purchase expense, prepayments, etc., are determined by generally accepted regulatory methods. A lead/lag study measures the differences in time frames between (1) the time that service is rendered until the revenues for that service are received (lag) and (2) the time that labor, materials, or services are used in providing service until expenditures for such items are made (lead). Each major category of expense and its applicable lead days is compared to the calculated revenue lag days. The difference between these periods, expressed in terms of days, times the average daily operating expenses, produces the cash working capital required or available for those operating expenses.

Components of the Lead/Lag Study. This lead/lag study will compile and analyze revenues collected and expenses paid to determine the lead or lag days. This study has been categorized into the following major classifications:

Lag Time for Revenues Collected

A. Usage Lag

B. Billing Lag

C. Payment Lag

Lead Time for Expenses Paid

A. Fuel Expense – Coal, Electric and Oil

B. Purchase Power Expense

C. Payroll Expense

D. FICA Withheld

E. Federal Income Tax Withheld

F. State Income Tax Withheld

G. 401K-Employee Withholdings/Employer Match

H. Other Operation and Maintenance Expenses (Cash Vouchers)

I. Property Taxes

J. Federal Unemployment Taxes

K. State Unemployment Taxes

L. FICA – Employer Match

M. Sales Tax

N. Use Tax

Calculation of Revenue Lag Time

To calculate the revenue lag, a database was created using July 2008, August 2008, December 2008 and January 2009 as sample months. These months were selected as equally representative of 2 summer and winter months. The database contained records of all rate classes and transactions that occurred during these months.

A. Usage Lag. EDE's meters are read and bills are computed on a cyclical basis throughout the month. To calculate the usage lag, a query was written against

the database to calculate the number of days between the end of the previous meter reading period and the current meter reading period in the sample months. A weighted average was used by multiplying the monthly charges for those months by the lag days calculated to obtain a weighted dollar amount for each charge. Totals for the charges and the weighted dollars were calculated and then the weighted dollars were divided by total charges to receive the average usage lag for the sample months. This lag was divided by 2 to achieve a midpoint average for the service period. The usage lag for Missouri customers was 15.28 days. The following table shows the computation of the average usage lag during the sample months.

Total Charges	Wt Dollar Amount	Lag Days	Midpoint Lag
$186,387,084.17	$5,693,562,817.99	30.55	15.28

B. Billing Lag. Billing lag reflects the number of days from the date a meter is read until the bills are mailed. To calculate the bill processing period, a query was written against the database to calculate the number of days between the end of the meter reading period and the date each bill was issued for every Missouri electric customer during the sample months. A weighted average was used by multiplying the charges by the lag days calculated to obtain the weighted dollar amounts. Totals for the charges and the weighted dollars were calculated and then the weighted dollars were divided by total charges to receive the average billing lag for the sample months. The billing lag for Missouri customers was 4.14 days. The following table shows the computation of the average billing lag during the sample months.

Total Charges	Wt Dollar Amount	Lag Days
$186,387,084.17	$772,278,338.20	4.14

C. Payment Lag. The payment lag is the average number of days for EDE to receive customer payments. The payment lag was calculated by comparing the number of days between the statement date and the date the bill was paid. A weighted dollar amount was achieved by calculating the payment lag days by the total statement amounts and totals were calculated for the statement amounts and calculated weighted dollar amounts. The weighted dollar amount was then divided by the total statement amount to obtain the average payment lag. The payment lag for Missouri customers was 29.46 days. The following table shows the computation of the average billing lag during the sample months.

Statement Amount	Wt Statement Amount	Lag Days
$186,385,007.30	$5,491,244,730.38	29.46

Calculation of Expense Lead

A. Fuel Purchase Expense – Coal, Gas and Oil. The payment period for fuel purchases are calculated by taking the number of days from the midpoint of the delivery period to the payment date for each invoice. The resulting payment time is then multiplied by the amount paid. Dividing the total weighted average payment amount by the total amount paid provides the lead time for electric purchases. This study reviewed all electric purchase invoices during the sample months with the following results:

Fuel	Statement Amount	Wt Statement Amount	Lead Days
Coal	$20,479,753.91	$132,053,311.37	6.45
Gas	$56,251,779.26	$401,850,485.20	7.14
Oil	$406,156.16	$1,492,837.09	3.68

B. Purchase Power Expense. The payment period for purchased power is calculated by taking the number of days from the midpoint of the delivery period to the payment date for each invoice. The resulting payment time is then multiplied by the amount paid. Dividing the total weighted average payment amount by the total amount paid provides the lead time for electric purchases. This study reviewed all electric purchase invoices during the sample months with the following results:

Statement Amount	Wt Statement Amount	Lead Days
$53,390,655.72	$477,164,493.48	8.94

C. Payroll. The payroll lead was broken down into components based on the timing of when the expenses were paid. Both the Operations and Administrative employees are paid bi-weekly (every other Friday). There are 26 pay periods in the year. The average lead time is 365 days divided by 26 pay periods, or 14.0 days. The average lead time would be one-half of the 14.0 days, or 7.0 days. In addition, payroll is paid 5 days in arrears, so the average payroll lead time is 12 days. This is the number of days between the midpoint of the pay period and the date the payroll is paid.

D. FICA. FICA expenses for the employee are deducted with payroll, or 5 days in arrears, which makes the FICA lead 12 days. (Using same practice as Payroll: 365 days / 26 pay periods = 14.0 days * ½ for midpoint = 7 days + 5 days in arrears = 12 days).

E. Federal Income Taxes. The payment period for federal income taxes are calculated by taking the number of days from the midpoint of the service period to the payment date for each payment. The resulting payment time is then multiplied by the amount paid. Dividing the total weighted average payment amount by the total amount paid provides the lead time for federal income taxes of 14.5 days.

F. State Income Taxes. The payment period for state income taxes are calculated by taking the number of days from the midpoint of the service period to the payment date for each payment. The resulting payment time is then multiplied by the amount paid. Dividing the total weighted average payment amount by the total amount paid provides the lead time for state income taxes of 18.8 days.

G. 401K-Employee. Employee contributions to 401K are paid at the same time payroll is made by EDE. The lead time, applying the same analysis as the payroll calculation, is 12 days. (365 days / 26 pay periods = 14.0 days * ½ for midpoint = 7 days + 5 days in arrears = 12 days).

H. 401K-Employer. EDE matches employee contributions to the 401K on a quarterly basis. The following data was collected for the analysis: the total amount of matches paid, the payment dates and the service period the match covers. The lead time was calculated by subtracting the midpoint of the service period from the beginning of the period. The total amount paid in matches was multiplied by the number of lead days to obtain the Weighted

Dollar Expense of each payment. Dividing the weighted dollar expense by the actual total expense equals the lead time of 60.56 days.

Statement Amount	Wt Statement Amount	Lead Days
$1,122,660.81	$67,992,136.76	60.56

I. Health Benefits

a. *Life Insurance* – The payment period for life insurance is calculated by taking the number of days from the midpoint of the service period to the payment date for each payment. The resulting payment time is then multiplied by the amount paid. Dividing the total weighted average payment amount by the total amount paid provides the lead time for life insurance of 7.01 days.

b. *Medical Care* – The payment period for medical insurance is calculated by taking the number of days from the midpoint of the service period to the payment date for each payment. The resulting payment time is then multiplied by the amount paid. Dividing the total weighted average payment amount by the total amount paid provides the lead time for medical insurance of (5.71) days.

c. *AD&D* – The payment period for AD&D insurance is calculated by taking the number of days from the midpoint of the service period to the payment date for each payment. The resulting payment time is then multiplied by the amount paid. Dividing the total weighted average payment amount by the total amount paid provides the lead time for AD&D insurance of 4.41 days.

d. *Dental/Vision* – The payment period for Dental and Vision insurance is calculated by taking the number of days from the midpoint of the service period to the payment date for each payment. The resulting payment time is then multiplied by the amount paid. Dividing the total weighted average payment amount by the total amount paid provides the lead time for Dental/Vision insurance of 9.23 days.

J. Other Operation and Maintenance Expense. Other O&M Expense consists of cash disbursements for items such as materials, miscellaneous services, professional and contractor services, and employee expenses. To determine the lead time for Other O&M Expenses, a computer query sorted all Missouri electric expenditures for the test period, excluding electric purchases and payroll. A lead time was calculated by subtracting the invoice date from the payment date and that time was multiplied by the invoice total for a weighted dollar amount. The total weighted average divided by the invoice totals equaled the lead time of 23.62 days. The following table shows the computation of the average payment lag during the test year.

Cash Vouchers	**Wt Voucher Amount**	**Lead Days**
$23,781,070.07	$561,640,827.21	23.62

K. Property Taxes. EDE begins accruing property taxes at the beginning of the calendar year, January 1, and continues through December 31, when the bill is due. There are 365 days in the calendar year and as a result, the service period = 365 days. For this analysis, the midpoint must be obtained by dividing by 2 for a total lead time of 182.50 days. (365 days/2 = 182.50 days).

L. Federal Unemployment Taxes. Payments for the Federal Unemployment taxes are paid on a quarterly basis. The following data was collected for the analysis: the total amount of payment, the payment dates and the service period the payment covers. The lead time was calculated by subtracting the midpoint of the service period from the beginning of the period. The total amount paid was multiplied by the number of lead days to obtain the Weighted Dollar Expense of each payment. Dividing the weighted dollar expense by the actual total expense equals the lead time of 58.78 days.

FUTA	Wt FUTA Amount	Lead Days
$42,088.56	$2,473,864.89	58.78

M. State Unemployment Taxes. Payments for the State Unemployment taxes are paid on a quarterly basis. The following data was collected for the analysis: the total amount of payment, the payment dates and the service period the payment covers. The lead time was calculated by subtracting the midpoint of the service period from the beginning of the period. The total amount paid was multiplied by the number of lead days to obtain the Weighted Dollar Expense of each payment. Dividing the weighted dollar expense by the actual total expense equals the lead time of 63.11 days.

SUTA	Wt FUTA Amount	Lead Days
$86,350.95	$5,449,459.28	63.11

N. FICA-Employer Match. FICA expenses are paid the Monday after the payroll is paid, or 7 days in arrears, which makes the FICA lead 14 days. (Using same practice as Payroll: 365 days / 26 pay periods = 14.0 days * ½ for midpoint = 7 days + 7 days in arrears = 14 days).

O. Sales Tax. Sales tax payments are made by EDE on a monthly basis. The following data was collected for the analysis: the total amount of payment, the payment dates and the service period the payment covers. The lead time was calculated by subtracting the midpoint of the service period from the beginning of the period. The total amount paid was multiplied by the number of lead days to obtain the Weighted Dollar Expense of each payment. Dividing the weighted dollar expense by the actual total expense equals the lead time of 38.30 days.

Sales Tax Payments	Wt Dollar Amount	Lead Days
$8,803,681.57	$337,149,353.94	38.30

P. Use Tax. Use tax payments are made by EDE on a quarterly basis. The following data was collected for the analysis: the total amount of payment, the payment dates and the service period the payment covers. The lead time was calculated by subtracting the midpoint of the service period from the beginning of the period. The total amount paid was multiplied by the number of lead days to obtain the Weighted Dollar Expense of each payment. Dividing the weighted dollar expense by the actual total expense equals the lead time of 76.15 days.

Use Tax Payments	Wt Dollar Amount	Lead Days
$170,363.25	$12,973,317.14	76.15

Calculation of Days Cash Required

The difference between revenue lag and expense lead times for each expense category provides the net number of days of cash required. The cash requirements for expenses are illustrated in the chart on page 11.

The Empire District Electric Company
Cash Working Capital

Description	A Revenue Lag	B Expense Lag	C Cash Working Capital Lag	D Cash Working Capital Factor	E Normalized Test Year Expense	F Cash Working Capital Requirement
Fuel - Coal	48.8800	6.4500	42.4300	0.116247	28,436,177	3,305,608
Fuel - Gas	48.8800	7.1400	41.7400	0.114356	61,675,836	7,053,012
Fuel - Oil	48.8800	3.6800	45.2000	0.123836	82,618	10,231
Purchased power	48.8800	8.9400	39.9400	0.109425	53,372,085	5,840,222
Payroll expense	48.8800	12.0000	36.8800	0.101041	32,511,745	3,285,022
FICA Withheld	48.8800	12.0000	36.8800	0.101041	2,377,643	240,240
Federal Income Tax Withheld	48.8800	14.5000	34.3800	0.094192	5,070,214	477,572
State Income Tax Withheld	48.8800	18.8000	30.0800	0.082411	1,569,592	129,352
Employees 401K withheld	48.8800	12.0000	36.8800	0.101041	939,217	94,900
Employers 401K matching	48.8800	60.5600	-11.6800	0.032000	741,235	-23,720
Employers Life Insurance matching	48.8800	7.0100	41.8700	0.114712	399,930	45,877
Employers Healthcare	48.8800	-5.7100	54.5900	0.149562	4,446,063	664,960
Employers AD&D	48.8800	4.4100	44.4700	0.121836	43,429	5,291
Employers Dental/Vision	48.8800	9.2300	39.6500	0.108630	95,860	10,413
Cash vouchers	48.8800	23.6200	25.2600	0.069205	55,607,836	3,848,367
Total O&M expenses (less depreciation)					247,369,480	24,987,348
Property taxes	48.8800	182.5000	133.6200	0.366082	14,811,871	-5,422,362
Federal Unemployment	48.8800	58.7800	-9.9000	0.027123	25,300	-686
State Unemployment	48.8800	63.1100	-14.2300	0.038986	49,724	-1,939
Employer FICA	48.8800	14.0000	34.8800	0.095562	2,377,643	227,211
Sales Taxes	48.8800	38.3000	10.5800	0.028986	8,803,682	255,186
Use Taxes	48.8800	76.1500	-27.2700	0.074712	170,363	-12,728
Total customer supplied funds						-4,955,318
Net cash working capital						20,032,030