

Exhibit No.:
Issue: *Depreciation of Plant*
Witness: *Jolie L. Mathis*
Sponsoring Party: *MoPSC Staff*
Type of Exhibit: *Direct Testimony*
Case No.: *GR-2007-0003*
Date Testimony Prepared: *December 15, 2006*

MISSOURI PUBLIC SERVICE COMMISSION
UTILITY SERVICES DIVISION

DIRECT TESTIMONY
OF
JOLIE L. MATHIS

UNION ELECTRIC COMPANY
d/b/a AMERENUE

CASE NO. GR-2007-0003

Jefferson City, Missouri
December 2006

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

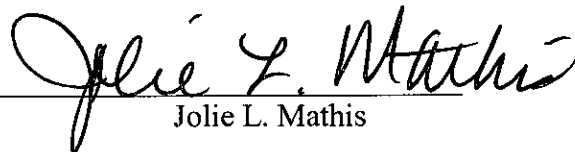
In the Matter on Union Electric d/b/a AmerenUE)
for Authority to File Tariffs Increasing Rates for)
Gas Service Provided to Customers in the)
Company's Missouri Service Area.)

Case No. GR-2007-0003

AFFIDAVIT OF JOLIE L. MATHIS

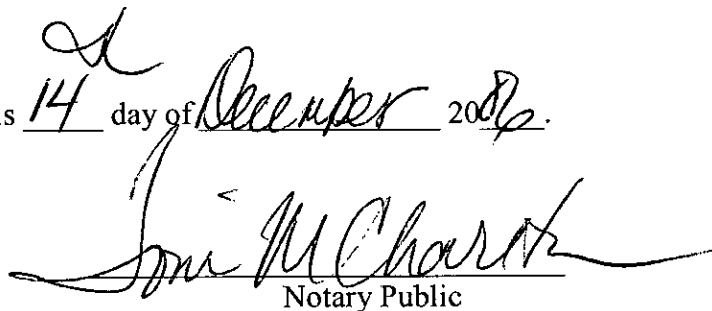
STATE OF MISSOURI)
)
COUNTY OF COLE) ss.

Jolie L. Mathis, of lawful age, on her oath states: that she has participated in the preparation of the foregoing Direct Testimony in question and answer form, consisting of 9 pages to be presented in the above case; that the answers in the foregoing Direct Testimony were given by her; that she has knowledge of the matters set forth in such answers; and that such matters are true and correct to the best of her knowledge and belief.

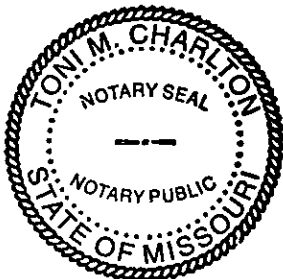


Jolie L. Mathis

Subscribed and sworn to before me this 14 day of December 2006.



Notary Public



TONI M. CHARLTON
Notary Public - State of Missouri
My Commission Expires December 28, 2008
Cole County
Commission #04474301

DIRECT TESTIMONY

OF

JOLIE L. MATHIS

UNION ELECTRIC COMPANY

d/b/a AMEREN UE

CASE NO. GR-2007-0003

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A. Jolie L. Mathis, P.O. Box 360, Jefferson City, Missouri 65102.

A. I am employed by the Missouri Public Service Commission (Commission) as a
Engineering Specialist III in the Engineering and Management Services Department.

A. I am responsible for depreciation calculations and studies of companies
ed by the Commission.

A. I graduated from Prairie View A&M University of Texas in August of 1993, Bachelor of Science degree in Electrical Engineering. During my college years I was employed as an engineering intern with Allied Signal Aerospace Company, Missouri Public Service Company (now Aquila) and Sprint United Telephone Co. – Midwest Division (now Spectrum). In 1994 I accepted my current position. I have received formal training from the National Association of Depreciators, Inc. and the Society of Depreciation Professionals. I have completed

1 the NARUC Annual Regulatory Studies Program, and attended numerous industry seminars
2 in the electric, natural gas, water, and sewer and telecommunications areas.

3 **EXECUTIVE SUMMARY**

4 Q. Would you please summarize your direct testimony?

5 A. I conducted Staff's depreciation study of Ameren UE gas plant at
6 December 31, 2005. Based on that study the Staff is recommending to the Commission
7 depreciation rates which, when applied to the test year plant-in-service ending June 30, 2006,
8 decrease the currently ordered annual depreciation expense from \$7,897,335 to \$7,516,584, a
9 difference of \$380,751.

10 I used the straight line method, broad group procedure and whole life technique in
11 performing the Staff depreciation study. The straight line method is a depreciation method by
12 which the service value of plant is charged to depreciation expense and credited to the
13 accumulated depreciation account through equal annual charges over its service life. Under
14 the broad group procedure, all units of plant within a particular depreciation category are
15 considered to be one group, usually a plant account or sub-account. The whole life technique
16 bases the depreciation rate on the estimated average service life of the plant. The Staff used
17 the following formula to determine the depreciation rate to be applied to the original cost of
18 plant:

19 **$$\text{Depreciation Rate} = (100\% - \text{Net Salvage \%}) / \text{Average Service Life}$$**

20 I also did a theoretical reserve study where I compared the actual accumulated reserve
21 for depreciation to the reserve I calculated using the newly proposed life and salvage
22 estimates I employed in the Staff's depreciation study. This comparison was based on
23 December 31, 2005 plant balances.

DEPRECIATION STUDY

A. Have you previously testified before the Commission?

Q. Yes, I have. Attached as JMS 1 to my direct testimony is a list of cases in which I have previously filed testimony.

Q. When was the last time the Staff performed a depreciation study of AmerenUE's gas plant?

A. Staff last performed a depreciation study in Case No. GR-2000-512.

Q. When was the last time the Commission ordered depreciation rates for AmerenUE's gas plant?

A. The Commission last ordered depreciation rates for AmerenUE's gas plant in Case No. GR-2000-512 in an Order Approving Unanimous Stipulation and Agreement, that became effective November 1, 2000.

Q. Did the Staff perform a depreciation study of AmerenUE's gas utility property for purposes of this rate case?

A. Yes. I performed a depreciation study based on Company records reflecting data up to December 31, 2005.

Q. You have used the term "depreciation study." What is the "depreciation" you are studying?

A. The National Association of Railroad and Utilities Commissioners in 1958 approved this definition:

"Depreciation," as applied to depreciable utility plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of utility plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the cause to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes

1 in the art, changes in demand, and requirements of public authorities.
2 [Source: Public Utility Depreciation Practices, August 1996, Published
3 by the National Association of Regulatory Utility Commissioners]

4 Q. What ramifications does this definition have on the customer rates the
5 Commission sets?

6 A. This definition means that depreciation is a cost of providing service and that a
7 public utility should recover the capital invested in equipment needed to provide the required
8 service over the property's used and useful life. Since customer rates are based on a
9 12-month "test year," it is necessary to determine the depreciation that accrues during that
10 same 12-month "test year."

11 Q. How did you determine the annual accrual in this case?

12 A. I used the formula:

13
$$\text{Depreciation Rate} = (100\% - \text{Net Salvage \%}) / \text{Average Service Life}$$

14 Q. What is "average service life"?

15 A. The average service life (ASL), in years, is the average expected life of all
16 units of a group of property regardless of the placement date. The ASL is determined by
17 actuarial analysis of records of annual additions, retirements by vintage and balances, as well
18 as information provided by engineering and operations personnel. Survivor curve estimates
19 from other gas companies are also considered.

20 Q. How did you determine the average service lives you used in Staff's
21 depreciation study?

22 A. I used the retirement rate method.

23 Q. What is the retirement rate method?

24 A. The retirement rate method of life analysis is an actuarial method of
25 developing survivor curves using the average rate at which property is retired from each

1 experienced age group. Using the Gannett Fleming Software, AmerenUE historical mortality
2 data for an account is plotted and the stub curve (curve representing dollars surviving that
3 does not reach 0%) is compared to the known shape of a set of Iowa curves. Survivor curve
4 models, such as the Iowa curves, are widely used to simplify life analysis and forecasting.
5 These curves were developed at the Iowa State College's Iowa Engineering Experiment
6 Station 65 years ago. Three of the four families of curves include a base group of
7 176 industrial property mortality curves, and 18 types, published in Bulletin 125 of Iowa State
8 University's Engineering Research Institute, entitled "Statistical Analysis of Industrial
9 Property Retirements".

10 The classification of the survivor curves was made according to whether the mode
11 (highest point) of the frequency curves was to the left, to the right, or comparable with
12 average service life. The result included six left modal (L0,L1,L2,L3,L4,L5); five right modal
13 (R1,R2,R3,R4,R5); and seven symmetrical curves (S0,S1,S2,S3,S4, S5,S6). In 1957, a fourth
14 family was presented, consisting of the four O type survivor curves (O1,O2,O3,O4). Today,
15 these survivor curve types are used extensively in public utility depreciation studies.

16 Q. Sometimes a picture is worth a thousand words. Do you have an example of a
17 plotted stub curve and of an Iowa curve that might aid someone in understanding what you
18 just said?

19 A. Yes. Attached as Schedule JMS 4 is one of the survivor stub curves I plotted
20 and, with it, a fitted Iowa curve.

21 Q. How are stub curves matched to Iowa curves?

22 A. Informed analyst judgment of which Iowa curve makes the best fit to the
23 plotted stub curve.

1 Q. How do the Iowa curves provide you with the average service life?

2 A. The area under the chosen Iowa curve represents the average service life.

3 Q. What information is useful to the analyst in evaluating which type of Iowa
4 curve, with its life parameter, most nearly matches the stub survivor curve.

5 A. The most useful criterion used in determining a good fit is the square root of
6 the average difference squared between the percents surviving on the fitted smooth curve and
7 the stub curve. The lower this number, the better the match.

8 A. What is "net salvage"?

9 A. Net salvage is the gross salvage for the property retired less its cost of removal.
10 Gross salvage is the amount recorded for the property retired due to the sale, reimbursement,
11 or reuse of the property.

12 Q. What is "gross salvage"?

13 A. Gross salvage is the amount a utility records for the property when it is retired.
14 Property is retired when it is sold, the utility is repaid for it by a third party, or it is reused.

15 Q. Is net salvage always a positive amount?

16 A. No. Negative net salvage occurs when the cost of removal exceeds gross
17 salvage; this is also referred to as net cost of removal or net salvage expense.

18 Q. What is "net salvage percent" as used in the depreciation rate formula you
19 stated earlier?

20 A. The ratio of net salvage to original cost multiplied by 100%.

21 Q. How did you determine net salvage percentages in the Staff's depreciation
22 study?

1 A. For each account, I took the actual net salvage for the past 5 years and divided
2 it by the original cost of plant retired during those same 5 years. For a few accounts, an
3 unusually high or low net salvage amount was excluded to eliminate a percentage amount that
4 may cause the average to become skewed.

5 Q. Did the Staff determine net salvage for in this case consistent with the
6 Commission's statements regarding net salvage in its Third Report and Order issued
7 January 11, 2005, in Case No. GR-99-315 (Laclede) and in its March 10, 2005, Report and
8 Order in Case No. ER-2004-0570 (Empire)?

9 A. Yes. At page 9, of its Third Report and Order, in Case No. GR-99-315 the
10 Commission stated:

11 The Commission finds that the fundamental goal of depreciation
12 accounting is to allocate the full cost of an asset, including its net
13 salvage cost, over its economic or service life so that utility customers
14 will be charged for the cost of the asset in proportion to the benefit they
15 receive from its consumption.

16 Here, the Staff determined the net salvage by using the traditional accrual method,
17 where both gross salvage and cost of removal are reflected in the depreciation rates.

18 Q. Did the Staff develop depreciation rates for any gas plant assets on a basis
19 other than by using a broad group-average service life depreciation study?

20 A. No.

21 Q. What depreciation rates does the Staff recommend to the Commission?

22 A. Based on its depreciation study, the Staff recommends the Commission order
23 the depreciation rates shown in attached Schedule JMS 2.

24 Q. What impact do these depreciation rates have on AmerenUE's test year
25 depreciation expense?

1 A. Based on the test year ended June 30, 2006, AmerenUE's currently ordered
2 annual depreciation expense should be decreased from \$7,897,335 to \$7,516,584, a reduction
3 of \$380,751.

4 **THEORETICAL RESERVE**

5 Q. What is "theoretical reserve"?

6 A. Theoretical reserve is the calculated balance that would be in the accumulated
7 depreciation account if recommended, rather than current, depreciation parameters are used in
8 calculating accrued depreciation

9 Q. Why is the theoretical reserve important?

10 A. The theoretical reserve is a deduction from rate base. It has to be as accurate
11 as possible.

12 Q. How well have AmerenUE's current depreciation rates performed with respect
13 to the theoretical reserve accrual?

14 A. The Staff's theoretical reserve for 2005 is \$ 80,724,400 which represents 26%
15 of the original cost of AmerenUE's actual plant-in-service. AmerenUE's actual reserve for
16 2005 is \$99,518,975 representing 33% of the original cost of AmerenUE's actual plant-in-
17 service. Based on the Staff's depreciation study, AmerenUE's depreciation reserve is over
18 accrued by \$ 18,794,575.

19 Q. What, if anything, should the Commission do because of this over accrual?

20 A. The Staff does not propose the Commission make any adjustment to the
21 depreciation reserve at this time. Instead, the Commission should note the depreciation
22 reserve imbalance and direct the Staff to continue to monitor the imbalance in future
23 depreciation studies.

1 **RECOMMENDATION**

2 Q. What does the Staff recommend the Commission do based on the Staff's
3 depreciation study?

4 A. The Staff recommends that the Commission order the depreciation rates
5 proposed in Schedule JMS 2. Additionally, the Commission should note the accumulated
6 depreciation reserve over-accrual in Schedule JMS 3 and make no adjustment at this time.

7 Q. Does this conclude your direct testimony?

8 A. Yes, it does.

**JOLIE MATHIS
CASE PARTICIPATION**

Date Filed	Issue	Case Number	Exhibit	Case Name
12/1/1995		TO96147	Direct	Alltel Missouri, Inc.
3/7/1996		GA96130	Rebuttal	Missouri Pipeline Company
3/7/1996		GA9711	Rebuttal	Missouri Pipeline Company
1/10/1997		GM9770	Rebuttal	Atmos Energy Corp. & United Cities Gas
6/26/1997		GR97272	Direct	Associated Natural Gas
5/13/1999 Depreciation of Plant		HR99245	Direct	St. Joseph Light & Power Company
6/25/1999 Depreciation		WR99326	Direct	United Water Missouri, Inc.
4/3/2000 Amortization of Premature Retirement		SR2000282	Direct	Missouri-American Water Company
4/3/2000 Amortization of Premature Retirement		WR2000281	Direct	Missouri-American Water Company
7/2/2001 Depreciation of Plant		EC20021	Direct	Union Electric Company d/b/a AmerenUE
12/6/2001 Depreciation of Plant		EC2002265	Direct	UtiliCorp United Inc. d/b/a Missouri Public Service
12/6/2001 Depreciation of Plant		ER2001672	Direct	UtiliCorp United Inc. d/b/a Missouri Public Service
1/22/2002 Depreciation of Plant		EC2002265	Surrebuttal	UtiliCorp United Inc. d/b/a Missouri Public Service
3/1/2002 Depreciation of Plant		EC20021	Direct	Union Electric Company d/b/a AmerenUE
6/24/2002 Depreciation - Net Salvage; Average Service Lives; Theoretical Reserve		EC20021	Surrebuttal	Union Electric Company d/b/a AmerenUE
4/15/2004 Depreciation		GR20040209	Direct	Missouri Gas Energy
6/14/2004 Depreciation Rates		GR20040209	Surrebuttal	Missouri Gas Energy
10/14/2004 Depreciation of Plant		HM20040618	Rebuttal	Trigen-Kansas City Energy Corp. and Thermal North America, Inc.

Union Electric Company, dba AmerenUE
Case No. GR-2007-0002

DEPRECIATION DETERMINATION SPREADSHEET

Account No.	Title	Plant	Ordered	Staff's Proposal				Company's Proposal					Ordered	Staff's	Increase /
		Original Cost	Deprec.	Life	Curve	Net	Deprec.	Probable	Life	Curve	Net	Deprec.	Annual	Annual	Decrease
		Jun-06	Rate (%)	(Yr.)		Salvage (%)	Rate (%)	Retirement Year	(Yr.)		Salvage (%)	Rate (%)	Accrual	Accrual	Accrual
	Production Plant														
305	Structures and Improvements	223,756	1.74%	60	L0.5	0	1.67%	2020	60	L0.5	0	3.16%	3,893	3,737	(157)
311	Liquid Petroleum Gas Equip	1,242,953	2.31%	55	L1	0	1.82%	2020	55	L1	0	3.25%	28,712	22,622	(6,090)
	Transmission Plant														
367	Transmission Mains	5,615,042	2.11%	50	R3	0	2.00%		50	R3	0	2.00%	118,477	112,301	(6,177)
369	Measuring & Regulating Stations	43,733	2.65%	45	O1	0	2.22%		45	O1	0	2.22%	1,159	971	(188)
	Distribution Plant														
375	Structures & Improvements	23,311	1.98%	50	R2	0	2.00%		50	R2	0	2.00%	462	466	5
376	Gas Mains	159,786,525	2.40%	45	L4	0	2.22%		50	R3	0	2.00%	3,834,877	3,547,261	(287,616)
378	Measuring & Reg. St. General	3,441,527	2.30%	47	O1	0	2.13%		45	O1	0	2.22%	79,155	73,305	(5,851)
379	Measuring & Reg. St. City Gate	421,323	2.27%	45	S0	0	2.22%		45	O1	0	2.22%	9,564	9,353	(211)
380	Gas Services	93,569,644	2.79%	40	L2.5	(3)	2.58%		35	R3	(3)	2.94%	2,610,593	2,414,097	(196,496)
381	Gas Meters	19,831,267	1.91%	40	R3	0	2.50%		40	R3	0	2.50%	378,777	495,782	117,004
383	House Regulators	9,876,829	2.21%	45	R3	(1)	2.24%		45	R3	0	2.22%	218,278	221,241	2,963
385	Industrial Measuring & Reg. Equip.	1,124,738	2.45%	20	R1	0	4.99%		26	R0.5	0	4.00%	27,556	56,124	28,568
	General Plant														
390	Structures & Improvements	1,052,323	1.27%	60	L4	0	1.67%		55	R2.5	0	1.82%	13,365	17,574	4,209
391	Office Furniture & Equipment	115,587	7.75%	12	L0	0	8.33%		15	SQ	0	6.13%	8,958	9,628	670
391.2	Personal Computers	5,656	11.11%	7	L4	0	14.29%		5	SQ	0	14.24%	628	808	180
392	Transportation Equipment	4,131,247	7.28%	14	S1.5	3	6.91%		15	S2	5	6.33%	300,755	285,469	(15,286)
393	Stores Equipment	27,268	6.67%	24	L2.5	0	4.17%		20	SQ	0	4.35%	1,819	1,137	(682)
394	Tools, Shop, & Garage Equipment	2,178,110	5.18%	22	R2	0	4.53%		20	SQ	0	4.66%	112,826	98,668	(14,158)
395	Laboratory Equipment	89,012	4.90%	20	L0.5	0	5.00%		20	SQ	0	2.33%	4,362	4,451	89
396	Power Operated Equipment	2,160,035	4.78%	18	S2	6	5.23%		18	S2	6	5.23%	103,250	112,970	9,720
397	Communications Equipment	657,923	6.06%	23	L0	0	4.35%		15	SQ	0	6.67%	39,870	28,620	(11,250)

Analyzed Totals															
Column Totals		305,617,809											7,897,335	7,516,584	(380,751)

Union Electric Company, dba AmerenUE
Case No. GR-2007-0003

[illegible]

