

Union Electric Company
Experimental Alternative Regulation Plan Monitoring
Case No. EM-96-149

Staff Calculation of
Average Capital Structure and Embedded Cost of Debt and Preferred
Year Ending June 30, 1999
(000)

	Capital Structure		Embedded Cost	Weighted Cost
	Dollars	Percent		
Beginning of Sharing Period (June 30, 1998)				
Common Stock Equity	\$2,415,631	55.334%	N/A	N/A
Preferred Stock	155,197	3.555%	5.775%	0.205%
Long Term Debt	1,794,739	41.111%	6.978%	2.869%
Total Capitalization	<u>\$4,365,567</u>	<u>100.000%</u>		
Return portion related to debt and preferred				<u>3.074%</u>
End of Sharing Period (June 30, 1999)				
Common Stock Equity	\$2,497,619	58.019%	N/A	N/A
Preferred Stock	155,197	3.605%	5.775%	0.208%
Long Term Debt	1,652,029	38.376%	6.953%	2.668%
Total Capitalization	<u>\$4,304,845</u>	<u>100.000%</u>		
Return portion related to debt and preferred				<u>2.876%</u>
Average for sharing period				
Common Stock Equity	\$2,456,625	56.667%	N/A	N/A
Preferred Stock	155,197	3.580%	5.775%	0.207%
Long Term Debt	1,723,384	39.753%	6.966%	2.769%
Total Capitalization	<u>\$4,335,206</u>	<u>100.000%</u>		
Return portion related to debt and preferred				<u>2.976%</u>
Return portion related to common equity				<u>56.667%</u>

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Staff Calculation of
Achieved Cost of Common Equity
Year Ending June 30, 1999
(000)

	<u>Total Electric</u>	<u>Missouri Jurisdictional</u>
Plant in Service	\$ 8,361,309	\$ 7,519,956
Reserve for Depreciation	<u>3,362,684</u>	<u>3,006,022</u>
Net Plant	\$ 4,998,625	\$ 4,513,934
Add:		
Fuel and Materials & Supplies	201,368	172,940
Cash Working Capital	(27,397)	(24,000)
Prepayments	13,491	11,818
Less:		
Income Tax Offset (Staff Method)	61,982	58,349
Interest Expense Offset (Staff Method)	15,172	13,712
Customer Advances	8,186	8,117
Customer Deposits	11,011	11,011
Accumulated Deferred Income Taxes	<u>809,466</u>	<u>714,965</u>
(A) Total Rate Base	<u>\$ 4,280,270</u>	<u>\$ 3,868,538</u>
(B) Net Operating Income	<u>\$ 459,671</u>	<u>\$ 420,921</u>
(C) Return on Rate Base ((B) / (A))	10.739%	10.881%
(D) Return Portion Related to Debt & Preferred	2.976%	2.976%
(E) Return Portion Related to Common Equity ((C) - (D))	7.763%	7.905%
(F) Equity Percentage of Capital Structure	56.667%	56.667%
(G) Achieved Cost of Common Equity ((E) / (F))	<u>13.700%</u>	<u>13.949%</u>

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Staff Calculation
Income Statement
Year Ending June 30, 1999
(000)

	<u>Total Electric</u>	<u>Missouri Jurisdictional</u>
Operating Revenues	\$ 2,119,079	\$ 1,901,245
Operation & Maintenance Expenses:		
Production:		
Fixed Allocation	\$ 98,074	\$ 85,918
Variable Allocation	512,020	434,961
Directly Assigned	(2,496)	(2,082)
Total Production Expenses	<u>\$ 607,598</u>	<u>\$ 518,797</u>
Transmission Expenses (Fixed)	\$ 16,066	\$ 14,068
Distribution Expenses (Direct)	93,495	87,478
Customer Accounting, Customer Service and Sales Expenses (Direct)	65,967	61,813
Administrative & General Expense:		
Directly Assigned	\$ (8,922)	\$ (6,329)
Labor Allocation	203,434	178,619
Total Administrative & General Expense	<u>\$ 194,512</u>	<u>\$ 172,290</u>
Total Operation & Maintenance Expenses	\$ 977,638	\$ 854,445
Depreciation & Amortization Expense:		
Fixed Allocation	\$ 68,322	\$ 59,823
Labor Allocation	9,578	8,482
Directly Assigned	175,377	160,618
Total Depreciation & Amortization Expense	<u>\$ 253,277</u>	<u>\$ 228,923</u>
Taxes Other Than Income Taxes:		
Fixed Allocation	\$ 52,356	\$ 45,843
Variable Allocation	1,394	1,184
Labor Allocation	4,308	3,816
Directly Assigned	142,054	133,425
Total Taxes Other Than Income Taxes	<u>\$ 200,112</u>	<u>\$ 184,268</u>
Income Taxes		
Federal Income Tax	\$ 195,818	\$ 181,157
Environmental Tax	0	0
Missouri State Income Tax	31,505	31,532
Other States Income Tax	1,058	0
Total Income Taxes	<u>\$ 228,381</u>	<u>\$ 212,689</u>
Net Operating Income	<u>\$ 459,671</u>	<u>\$ 420,921</u>

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Staff Calculation of Customers Sharing Credit
Year Ending June 30, 1999
(000)

Missouri Rate Base	\$3,868,538
Total Return on Rate Base	10.881%
Earned Return on Common Equity	13.949%
50% Sharing for Earned Return > 12.61% but < 14.00% [(14% - 12.61%) x 50% x Rate Base x Common Equity %]	\$14,680
Total 50% Sharing Including Income Taxes **	\$23,827
90% Sharing for Earned Return > 14% [(Achieved Return on Equity - 14%) x 100% x Rate Base x Common Equity %]	\$0
Total 100% Sharing Including Income Taxes **	\$0.00
Total Customers Sharing Credit for the Current Period Including Income Taxes	\$23,827
Under (Over) Credit of Actual 1997 Customers Sharing Credit	\$0
Total Customers Sharing Credit	\$23,827

** Gross-up factor for income taxes - 1.6231

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Allocations 12 Months Ending June 30, 1999

	<u>Total Electric</u>	<u>Missouri Jurisdictional</u>
Fixed	100.00%	87.56%
Variable	100.00%	84.95%
Nuclear	100.00%	87.49%
Distribution	100.00%	94.44%
Missouri Distribution	100.00%	99.49%
Labor	100.00%	88.56%
Net Plant	100.00%	90.30%
Operating Revenues	100.00%	89.71%
Operating Expenses	100.00%	87.60%
Callaway Post Operational	100.00%	94.37%
EPRI	100.00%	91.49%

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Average Rate Base
 Year Ending June 30, 1999

Revenue (Refund) Requirement

(A)	12.61% Equity Return (B)	13.95% Equity Return (C)
Net Original Cost Rate Base (From Acctg. Sch. 2)	\$ 3,868,538	\$ 3,868,538
Rate of Return	10.12%	10.88%
	-----	-----
Net Operating Income Requirement	\$ 391,560	\$ 420,921
Net Income Available (From Acctg. Sch 8)	420,921	420,921
	-----	-----
Additional Net Operating Income Needed Before Income Taxes	\$ (29,361)	\$ 0
Income Tax Requirement: (From Acctg. Sch. 10)		
Required Current Income Tax	\$ 213,893	\$ 232,187
Test Year Current Income Tax	232,187	232,187
	-----	-----
Additional Current Income Tax Required	\$ (18,294)	\$ 0
Revenue Requirement	\$ 47,655	\$ 0
Revenue Refund		\$ 23,827

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Average Rate Base
 Year Ending June 30, 1999

		Missouri Jurisdiction

Total Average Plant In Service	(From Accounting Schedule 3)	\$ 7,519,956
Average Depreciation Reserve	(From Accounting Schedule 5)	3,006,022

Net Average Plant In Service		\$ 4,513,934

Add:		
Stipulated Cash Working Capital		\$ (24,000)
Unspent nuclear fuel in reactor	(From Accounting Schedule 7)	35,532
Coal Inventory	(From Accounting Schedule 7)	54,470
Other fuel and General M&S	(From Accounting Schedule 7)	82,938
Average prepayments	(From Accounting Schedule 7)	11,818

Total Additions		\$ 160,758

Less:		
Income tax offset @ 25.13%		\$ 58,349
Interest offset @ 12.80%		13,712
Customer Advances		8,117
Accumulated deferred income tax		714,965
Customer Deposits		11,011

Total Deductions		\$ 806,154

Total Rate Base	(To Accounting Schedule 1)	\$ <u>3,868,538</u>

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Average Plant In Service
Year Ending June 30, 1999

Description	Total Company	Accounting Schedule 4 Total Company Adjustments		Adjusted Total Electric	Allocation Factor	Missouri Jurisdictional
		Amount	Adjust. No.			
Intangible Plant						
Account 301	135	(6)	P-1	129	88.56%	114
Account 302						
Power Pool	\$ 14			14	87.56%	12
System General	3			3	88.56%	2
Heating and Gas	0	0	P-2	0		
Total Account 302	\$ 16	\$ 0		\$ 16		\$ 14
Total Intangible Plant	\$ 151	\$ (6)		\$ 146		\$ 129
Production Plant						
Nuclear	\$ 2,879,793	\$		\$ 2,879,793	87.56%	\$ 2,521,546
Callaway Post Operational	116,731			116,731	94.37%	110,159
Callaway Disallowances	(385,593)			(385,593)	Direct	(339,359)
Steam	1,969,679			1,969,679	87.56%	1,724,651
Hydraulic	145,905			145,905	87.56%	127,754
Other	41,184			41,184	87.56%	36,061
Total Production	\$ 4,767,699	\$ 0		\$ 4,767,699		\$ 4,180,813
Transmission Plant	\$ 435,173	\$		\$ 435,173	87.56%	\$ 381,037
Distribution Plant						
Missouri	\$ 2,595,411	\$ 1,285	P-4	\$ 2,596,696	Direct	\$ 2,583,346
Illinois	138,570			138,570	0.00%	0
Iowa	0			0	0.00%	0
Total Distribution	\$ 2,733,981	\$ 1,285		\$ 2,735,266		\$ 2,583,346
General Plant	\$ 429,312	\$ (6,287)	P-3	\$ 423,025	88.56%	\$ 374,631
Plant Held For Future Use	\$ 0	\$		\$ 0		\$ 0
Total Plant In Service	\$ 8,366,316	\$ (5,007)		\$ 8,361,309		\$ 7,519,956

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Adjustments to Plant In Service
Year Ending June 30, 1999

	P-1		
Intangible Plant Account 301		\$	(6)
1 To adjust plant in service to exclude steam heating and gas operations.		\$	(6)
	P-2		
Intangible Plant Account 302		\$	0
1 No adjustment		\$	
	P-3		
General Plant		\$	(6,287)
1 To adjust plant in service to exclude steam heating and gas operations.		\$	(6,287)
	P-4		
Distribution Plant		\$	1,285
1 To include substation construction associated with territorial agreements		\$	1,285

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Average Depreciation Reserve
Year Ending June 30, 1999

Description	Total Company	Accounting Schedule 4 Total Company Adjustments		Adjusted Total Electric	Allocation Factor	Missouri Jurisdictional
		Amount	Adjust. No.			
Intangible Plant						
Account 301						
System General	\$ 0	\$		\$ 0		\$ 0
Heating and Gas	0			0		
Total Account 301	<u>\$ 0</u>	<u>\$ 0</u>		<u>\$ 0</u>		<u>\$ 0</u>
Account 302						
Power Pool	\$ 0			0		0
System General	0			0		0
Heating and Gas	0			0		
Total Account 302	<u>\$ 0</u>	<u>\$ 0</u>		<u>\$ 0</u>		<u>\$ 0</u>
Total Intangible Plant	<u>\$ 0</u>	<u>\$ 0</u>		<u>\$ 0</u>		<u>\$ 0</u>
Production Plant						
Nuclear	\$ 801,131	\$		\$ 801,131	87.49%	\$ 700,910
Callaway Post Operational	21,471			21,471	94.37%	20,263
Steam	966,284			966,284	87.56%	846,078
Hydraulic	60,727			60,727	87.56%	53,172
Other	37,491			37,491	87.56%	32,827
Total Production	<u>\$ 1,887,105</u>	<u>\$ 0</u>		<u>\$ 1,887,105</u>		<u>\$ 1,653,250</u>
Transmission Plant	<u>\$ 186,330</u>	<u>\$</u>		<u>\$ 186,330</u>	87.56%	<u>\$ 163,150</u>
Distribution Plant						
Missouri	\$ 1,106,223	\$ 17	R-2	\$ 1,106,240	99.49%	\$ 1,100,598
Illinois	82,486			82,486	0.00%	0
Iowa	0			0	0.00%	0
Total Distribution	<u>\$ 1,188,710</u>	<u>\$ 17</u>		<u>\$ 1,188,727</u>		<u>\$ 1,100,598</u>
General Plant	<u>\$ 102,028</u>	<u>\$ (1,505)</u>	R-1	<u>\$ 100,523</u>	88.56%	<u>\$ 89,023</u>
Allocation to Heating & Gas	(1,505)					
Total Plant In Service	<u>\$ 3,362,667</u>	<u>\$ (1,488)</u>		<u>\$ 3,362,684</u>		<u>\$ 3,006,022</u>

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Adjustments to Depreciation Reserve
Year Ending June 30, 1999

	R-1		
General Plant Reserve		\$	(1,505)
1 To adjust plant in service to exclude steam heating and gas operations.		\$	(1,505)
	R-2		17
Distribution Plant			
1 To include the depreciation reserve on territorial agreement plant additions.			17

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Average Fuels, Material & Supplies and Prepayments
Year Ending June 30, 1999

Unspent Nuclear Fuel in Reactor

Total Company	Missouri Jurisdictional Percentage	Missouri Jurisdictional
\$41,827	84.95%	\$35,532

Coal

Total Year Burn		75 Day Supply	Current Cost/Ton	Adjusted Coal Inventory (\$) Level
8,204	Labadie	1,686	\$17,344	29,238
2,769	Sioux	569	20.852	11,865
1,599	Meremac	329	25.415	8,352
4,756	Rush Island	977	15.008	14,667
				64,121
			Missouri Jurisdictional Percent	84.95%
			Missouri Jurisdiction	\$54,470

Other Fuel and General M&S

Total Company		Missouri Jurisdictional Percentage	Missouri Jurisdictional
\$1,882	Oil	84.95%	\$1,599
7	Shredded Tires	84.95%	6
10	Petroleum Coke	84.95%	9
34	Propane/Elec	84.95%	29
471	Propane/Gas		0
73,366	Power Pool M&S	84.95%	62,324
20,121	Direct M&S - Elec	NA	18,971
1,559	Direct M&S - Gas	NA	0
\$97,450			\$82,938

Prepayments

Total Company		Missouri Jurisdictional Percentage	Missouri Jurisdictional
\$13,773			
282	Gas & steam heating		
\$13,491	Electric	87.60%	\$11,818

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Accounting Schedule 8

Income Statement
Year Ending June 30, 1999

	Total Electric As Recorded	Total Company Adjustment	Adjustmen t Number	Allocation Factor	Missouri Jurisdictional	Jurisdictiona l Adjustment	Adjustment Number	Adjusted Jurisdictiona l
Operating Revenue	\$ 2,117,032	\$ 0	S-1	NA	\$ 1,899,198	\$ 2,047	S-1	\$ 1,901,245
Operating & Maintenance Expenses								
Production								
Variable	\$ 493,536	\$ 18,484	S-2	84.95%	\$ 434,961	\$ 0	S-2	\$ 434,961
Direct	(2,496)	0	S-3	NA	(2,082)	0	S-3	(2,082)
Power Pool	97,715	0	S-4	87.56%	85,559	359	S-4	85,918
Transmission	16,066	0	S-5	87.56%	14,068	0	S-5	14,068
Distribution								
Missouri	87,505	0	S-6	99.49%	87,059	419	S-6	87,478
Other direct	5,571	0		0.00%	0	0		0
Customer Accounting								
Missouri direct	61,994	(170)	S-7	NA	61,813	0	S-7	61,813
Other direct	4,143	0		0.00%	0	0		0
Administrative and General								
Direct	2,977	(9,899)	S-8	NA	(4,329)	(2,000)	S-8	(6,329)
System General	222,402	(5,488)	S-9	88.56%	192,099	(13,480)	S-9	178,619
Total Operation & Maintenance	\$ 989,413	\$ 2,927			\$ 869,147	\$ (14,702)		\$ 854,445
Other Expenses								
Depreciation and Amortization								
Power Pool	68,322	0	S-10	87.56%	59,823	0	S-10	59,823
Direct	175,360	0	S-11	NA	160,601	17	S-11	160,618
System General	9,578	0	S-12	88.56%	8,482	0	S-12	8,482
Taxes Other								
Variable	1,394	0	S-13	84.95%	1,184	0	S-13	1,184
Power Pool	52,356	0	S-14	87.56%	45,843	0	S-14	45,843
Direct	142,054	0	S-15	NA	133,425	0	S-15	133,425
System General	4,308	0	S-16	88.56%	3,816	0	S-16	3,816
Other Expenses	\$ 453,372	\$ 0			\$ 413,174	\$ 17		\$ 413,191
Net Operating Inc. Before Inc. Tax	\$ 674,246	\$ (2,927)			\$ 616,877	\$ 16,732		\$ 633,609
Income Taxes								
Current	\$ 246,647	\$ 0	S-17	Various	\$ 224,660	\$ 7,527	S-17	\$ 232,187
Deferred	(18,266)	0	S-18	Various	(14,865)	(4,633)	S-18	(19,499)
Total Income Taxes	\$ 228,381	\$ 0			\$ 209,795	\$ 2,894		\$ 212,689
Net Operating Income	\$ 445,865	\$ (2,927)			\$ 407,082	\$ 13,838		\$ 420,921

Accounting Schedule 8

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Adjustments To Income Statement
Year Ending June 30, 1999

Adj. No.	Description	Total Company	Missouri Jurisdictional
Revenue S-1		\$ 0	\$ 2,047
1	To restore lost revenue resulting from territorial agreements.		2,047
Production - Variable S-2		\$ 18,484	\$ 0
1	To normalize Callaway refueling.	\$ 18,484	\$
Production - Direct S-3		\$ 0	\$ 0
1	No adjustment	\$	\$
Production - Power Pool S-4		\$ 0	\$ 359
2	To include fuel cost for territorial agreement lost revenue		359
Transmission S-5		\$ 0	\$ 0
1	No adjustment.	\$	\$
Distribution S-6		\$ 0	\$ 419
1	To restore maintenance expense savings for territorial agreement plant.	\$	\$ 419
Cust Acctg, Svc and Sales S-7		\$ (170)	\$ 0
1	To include interest on customer deposits at	\$ 1,046	\$
2	To include residential insulation program	1	
3	To adjust uncollectible accounts for actual write-offs.	(1,217)	
A&G - Direct S-8		\$ (9,899)	\$ (2,000)
1	To eliminate goodwill advertising.	\$ (1,337)	\$
2	To eliminate lobbying costs	(210)	
3	To eliminate the computer cost associated with Y2K, CSS, EMPRV and AMRAPS	(8,352)	
4	To eliminate environmental costs		(2,000)
A&G - System General S-9		\$ (5,488)	\$ (13,480)

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Adjustments To Income Statement
Year Ending June 30, 1999

Adj. No.	Description	Total Company	Missouri Jurisdictional
1	To eliminate EEI dues.	(703)	
2	To "annualize" FAS 87 & 106	(4,786)	
3	To adjust injuries and damages expense		(7,449)
4	To eliminate legal costs		(563)
5	To eliminate TSP costs in excess of savings		(5,468)
Depreciation - Power Pool S-10			
1	No adjustment.	\$ 0	\$ 0
Depreciation - Direct S-11			
1	To include depreciation expense on territorial agreement plant		17
Depreciation - System General S-12			
1	No adjustment.	\$ 0	\$ 0
Taxes Other - Variable S-13			
1	No adjustment	\$ 0	\$ 0
Taxes Other - Power Pool S-14			
1	No adjustment	\$ 0	\$ 0
Taxes Other - Direct S-15			
1	No adjustment	\$ 0	\$ 0
Taxes Other - System General S-16			
1	No adjustment.	\$ 0	\$ 0
Current Income Tax S-17			
1	To adjust current income tax expense.	\$ 7,527	\$ 7,527
Deferred Income Tax S-18			
1	To eliminate deferred taxes associated with dismantling expense	\$ (4,633)	\$ (4,633)

Union Electric Company
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 Test Year Ending June 30, 1999

Income Tax

Description (A)	Test Year (B)	12.61% Return (C)	13.95% Return (D)
Net Operating Income (Acctg. Sch. 1)	\$ 420,921	\$ 391,560	\$ 420,921
Add:			
Current Income Tax	232,187	213,893	232,187
Deferred Income Taxes	(19,499)	(19,499)	(19,499)
Net Income Before Taxes (Acctg. Sch. 8)	\$ 633,609	\$ 585,955	\$ 633,609
Timing differences			
Net excluding interest	78,352	78,352	78,352
Interest Expense @ 2.77%	(107,128)	(107,128)	(107,128)
Net Taxable Income	\$ 604,833	\$ 557,179	\$ 604,833
Provision For Federal Income Tax			
Net Taxable Income	\$ 604,833	\$ 557,179	\$ 604,833
Deduct:			
Missouri Income Tax 100%	31,532	29,047	31,532
Federal Taxable Income	\$ 573,302	\$ 528,132	\$ 573,302
Federal Income Tax @ 35%	\$ 200,656	\$ 184,846	\$ 200,656
Provision For Missouri Income Tax			
Net Taxable Income	\$ 604,833	\$ 557,179	\$ 604,833
Deduct:			
Federal Income Tax 50%	100,328	92,423	100,328
Missouri Taxable Income	\$ 504,506	\$ 464,756	\$ 504,506
Missouri Income Tax @ 6.25%	\$ 31,532	\$ 29,047	\$ 31,532
Summary of Provision For Income Tax			
Federal Income Tax	\$ 200,656	\$ 184,846	\$ 200,656
Federal Environmental Tax		0	0
Missouri Income Tax	31,532	29,047	31,532
Total Income Tax	\$ 232,187	\$ 213,893	\$ 232,187