

Exhibit No.:
Issue(s): *Class Cost of Service
and Rate Design*
Witness: *Michael L. Stahlman*
Sponsoring Party: *MoPSC Staff*
Type of Exhibit: *Direct Testimony*
Case No.: *GR-2024-0106*
Date Testimony Prepared: *August 1, 2024*

MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

TARIFF/RATE DESIGN DEPARTMENT

DIRECT TESTIMONY

OF

MICHAEL L. STAHLMAN

LIBERTY UTILITIES (Midstates Natural Gas) CORP.,

d/b/a Liberty

CASE NO. GR-2024-0106

Jefferson City, Missouri
August 2024

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**TABLE OF CONTENTS OF
DIRECT TESTIMONY OF
MICHAEL L. STAHLMAN**

**LIBERTY UTILITIES (Midstates Natural Gas) CORP.,
d/b/a Liberty**

CASE NO. GR-2024-0106

SUMMARY OF RECOMMENDATIONS.....2
EXECUTIVE SUMMARY2
RATE DESIGN AND CCOS OVERVIEW4
STAFF’S CLASS COST OF SERVICE STUDIES.....5
STAFF’S RATE DESIGN.....7

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

DIRECT TESTIMONY
OF
MICHAEL L. STAHLMAN
LIBERTY UTILITIES (Midstates Natural Gas) CORP.,
d/b/a Liberty
CASE NO. GR-2024-0106

Q. Please state your name and business address.

A. My name is Michael L. Stahlman, and my business address is Missouri Public Service Commission, P.O. Box 360, Jefferson City, Missouri, 65102.

Q. By whom are you employed and in what capacity?

A. I am employed by the Missouri Public Service Commission (“Commission”) as a Regulatory Economist in the Tariff/Rate Design Department in the Industry Analysis Division.

Q. Please describe your educational and work background.

A. Please see Schedule MLS-d1.

Q. Have you previously testified in proceedings before the Commission?

A. Yes. Please see Schedule MLS-d1, for a list of cases in which I have filed testimony with the Commission.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to present the results of Staff’s Class Cost of Service Study (“CCOS”) and provide Staff’s recommended rate design.

Q. Will you address the Purchased Gas Adjustment (“PGA”) rates?

A. No, this testimony will only address non-gas costs. The PGA revenue requirement is adjusted through a separate process.

SUMMARY OF RECOMMENDATIONS

Q. Could you summarize Staff’s rate recommendations in this case?

A. Yes. I recommend that the Commission order Liberty Utilities (Midstates Natural Gas) Corp. d/b/a Liberty (“Liberty Midstates”) to:

1. Work with Staff to update the coefficients and rates in the Weather Normalization Adjustment Rider (“WNAR”), tariff sheets nos. 67 and 67.1, consistent with the final billing determinants and rates in this rate case.
2. Reset Liberty Midstates’ Infrastructure System Replacement Surcharge (“ISRS”), tariff sheet no. 19, to zero, as presented in the Direct Testimony of Staff witness Paul K. Amenthor.
3. Adjust Liberty Midstates’ rates to the rate structure recommended by Staff. Based on the current information the Staff used in its Cost of Service Report (“COS”), those rates are as seen in Table 1.

Table 1. Staff’s Recommended Rate Structure For Liberty Midstates		Residential	Small General Service	Medium General Service	Large General Service	Interruptible
Liberty Midstates' NEMO/WEMO Districts	Customer Charge	\$ 27.50	\$ 35.00	\$ 155.00	\$ 750.00	\$ 650.00
	Delivery Charge (\$/Ccf)	-	0.19267	0.27972	0.17276	0.17002
	Winter Delivery Charge (Nov-Apr, \$/Ccf)	0.38588	-	-	-	-
	Summer Delivery Charge (May - Oct, \$/Ccf)	0.43923	-	-	-	-
Liberty Midstates' SEMO District	Customer Charge	\$ 17.50	\$ 27.00	\$ 155.00	\$ 750.00	\$ 750.00
	Delivery Charge (\$/Ccf)	0.27806	0.11638	0.26407	0.20334	0.20179

EXECUTIVE SUMMARY

Q. Please summarize your testimony.

Direct Testimony of
Michael L. Stahlman

1 A. Staff’s direct recommended revenue requirement increase is \$4,407,899 to
2 Liberty Midstates base rates, based on a return on equity (“ROE”) of 9.45%; the midpoint of
3 Staff’s recommended equity cost rate range of 9.00% to 9.90%. Staff’s recommended increase
4 by rate district is summarized below¹:

5 NEMO/WEMO²: \$2,503,512

6 SEMO³: \$1,866,007

7 Consistent with 20 CSR 4240-3.265(18), Staff also recommends that the Company’s
8 Infrastructure System Replacement Surcharge (“ISRS”) be reset to zero as presented in the
9 Direct Testimony of Paul Amenthor. Table 2 below provides the current gross revenues for
10 each district with Staff’s recommended revenue requirement increases.

11 Table 2. Impact of Staff’s Recommended Changes to Revenue Requirement by District

	Current Gross Revenues	Staff's Recommended Revenue Increase	Percentage Change	Total Revenue Requirement
NEMO/WEMO	\$ 15,868,143	\$ 2,503,512	15.78%	\$ 18,371,655
SEMO	\$ 16,796,839	\$ 1,866,007	11.11%	\$ 18,662,846

12
13 Staff’s revenue requirement, as presented in its *Accounting Schedules* filed July 18,
14 2024, includes costs through December 2023. Staff’s class cost-of-service (“CCOS”) study is
15 designed to determine what rate of return is produced by each customer class on that class’s
16 currently-tariffed rates, for recovery of the newly-determined revenue requirement amount.
17 Staff’s recommended interclass revenue responsibility shifts are designed to reasonably bring

¹ As noted on page 10 in the Direct Testimony of Staff witness Lisa M. Ferguson, “The individual NEMO/WEMO and SEMO accounting schedules total approximately \$38,380 less than the total consolidated accounting schedules. Staff continues to reconcile its accounting schedules and will update the accounting schedules to resolve this issue in rebuttal.”

² Northeast Missouri (“NEMO”) and West Missouri (“WEMO”) districts.

³ Southeast Missouri (“SEMO”) district.

1 each class closer to producing the system-average rate of return used in determining Staff's
2 recommended revenue requirement.

3 Staff's rate design recommendations provide intra-class shifts which will, where
4 appropriate, redesign the rates that collect a particular class's revenues to better align that
5 class's method of recovering revenue with the cost-causation for that class. Staff performed a
6 CCOS study for a combined NEMO/WEMO rate district, the SEMO rate district of Liberty
7 Midstates and a separate CCOS study that consolidates the three rate districts into one.

8 **RATE DESIGN AND CCOS OVERVIEW**

9 Q. What is the purpose of a CCOS?

10 A. The purpose of a CCOS is to provide a snapshot of a rate class's causation of
11 costs to a utility at a specific moment in time with certain assumptions. Non-gas costs and
12 expenses are allocated or assigned to each class in a CCOS. The purpose of Staff's CCOS study
13 is to determine whether each class of customers is providing the utility with a level of revenue
14 reasonably necessary to cover (1) the utility's investments required to provide service to that
15 class of customers and (2) the utility's ongoing non-gas expenses to provide natural gas service
16 to that class of customers. A CCOS study provides a basis for allocating and/or assigning to
17 the customer classes the utility's total cost of providing natural gas service to all of its customer
18 classes in a manner that best reflects cost causation. Staff's CCOS study is a continuation and
19 refinement of Staff's Cost-of-Service Study, resulting in an estimate of the non-gas costs
20 incurred in providing natural gas service to each of Liberty Midstates' customer classes for the
21 test year. Because those costs equate to Liberty Midstates' non-gas revenue requirement, the
22 results of a CCOS study determine class revenue requirements based on the cost responsibility

1 of each customer class for its equitable share of the utility's total annual non-gas cost of
2 providing natural gas service.

3 Schedule MLS-d2 provides fundamental concepts, terminology, and definitions used in
4 CCOS studies and rate design. It addresses functionalization, classification, and allocation, as
5 used in CCOS studies.

6 Q. What is the purpose of Rate Design?

7 A. The purpose of rate design is to reasonably relate the manner in which customers
8 are charged for a service to the manner in which the company incurs non-gas costs and expenses
9 to provide service and to make service available. However, various public policy concerns,
10 ranging from bill comprehension to mitigating company disincentives to promote
11 energy conservation, temper strict adherence to the seemingly precise results of these
12 cost-causation studies.

13 **STAFF'S CLASS COST OF SERVICE STUDIES**

14 Q. How many CCOS studies did Staff use?

15 A. Three; one for a combined NEMO/WEMO rate district, one for the SEMO
16 rate district, and a total company on a consolidated basis. Each CCOS analyzed six
17 customer classes:

- 18 • Residential
- 19 • Small General Service ("SGS")
- 20 • Medium General Service ("MGS")
- 21 • Large General Service ("LGS")
- 22 • Interruptible
- 23 • Special Contracts ("SC")

1 Q. What are the results of Staff's CCOS?

2 A. The results of the CCOS are shown in Table 3 below. The study only reflects
3 the non-gas portion of a customer's bill; it does not include costs associated with the Purchased
4 Gas Adjustment clause ("PGA"). The table shows the change in current retail rate revenues,
5 excluding ISRS charges, for each customer class that is required to match each customer class'
6 rate revenues with the cost to serve that class based on Staff's recommended revenue
7 requirement. The results of the study estimate, on a revenue neutral basis, the revenue shifts
8 (expressed as negative or positive dollar amounts or percentages) that are required to equalize
9 the utility's rate of return from each retail customer class during the test year. For example,
10 based on Table 3 below, the SEMO SGS customer class would need a 28.2% rate increase to
11 meet the cost to serve that class.

12

Table 3: Summary Results of Staff's CCOS Studies				
	Customer Class	Revenue Above (Below) Class Cost of Service	% Increase to Meet CCOS	System Average
NEMO/WEMO	Residential	\$ 2,588,174	25.7%	16.2%
	SGS	\$ 352,108	19.7%	16.2%
	MGS	\$ 120,349	5.8%	16.2%
	LGS	\$ (249,397)	-22.1%	16.2%
	SC **			** 16.2%
	Interruptible	\$ (119,306)	-56.4%	16.2%
SEMO	Residential	\$ 2,262,275	25.3%	11.7%
	SGS	\$ 397,437	28.2%	11.7%
	MGS	\$ 381,338	17.2%	11.7%
	LGS	\$ (1,242,729)	-50.0%	11.7%
	SC **			** 11.7%
	Interruptible	\$ (72,999)	-48.9%	11.7%

13
14 Another consideration is identification of which classes produce revenues that are above
15 and below the system average rate of return. Staff reviews the rates of return produced by each

1 class at current rates and the rates of return that will result from a system-average application
2 of the revenue requirement increase.

3 Q. What does Staff recommend, based on the current CCOS, for increases in
4 customer class revenues?

5 A. Table 4 below show's Staff's recommended increases in rate revenues. The
6 results are based on revenue neutral shifts and that no customer class should have a decrease in
7 rates when another customer class is receiving an increase. These shifts also recognize that the
8 Special Contract rates are negotiated between Liberty Midstates and the customers in that class.

Table 4: Staff's Recommended Increases in Class Revenues				
	Customer Class	Revenue Increase from Current Normalized Revenues	% Increase to Meet CCOS	System Average
NEMO/WEMO	Residential	\$ 2,117,056	21.0%	16.2%
	SGS	\$ 288,015	16.2%	16.2%
	MGS	\$ 98,442	4.7%	16.2%
	LGS	\$ -	0.0%	16.2%
	SC	\$ -	0.0%	16.2%
	Interruptible	\$ -	0.0%	16.2%
SEMO	Residential	\$ 1,388,146	15.5%	11.7%
	SGS	\$ 243,870	17.3%	11.7%
	MGS	\$ 233,991	10.6%	11.7%
	LGS	\$ -	0.0%	11.7%
	SC	\$ -	0.0%	11.7%
	Interruptible	\$ -	0.0%	11.7%

9
10 The revenue that was below the CCOS revenues were reallocated to the remaining
11 classes using the weight of the percentage increase needed to meet CCOS.

12 **STAFF'S RATE DESIGN**

13 Q. What is Staff's recommended rate design?

Direct Testimony of
Michael L. Stahlman

A. Based on current information and the COS and CCOS, Staff recommends the following rate designs that were already illustrated in Table 1 on page 2 above and here again. The current rates are provided in Table 5.

Table 1. Staff's Recommended Rate Structure For Liberty Midstates		Residential	Small General Service	Medium General Service	Large General Service	Interruptible
Liberty Midstates' NEMO/WEMO Districts	Customer Charge	\$ 27.50	\$ 35.00	\$ 155.00	\$ 750.00	\$ 650.00
	Delivery Charge (\$/Ccf)	-	0.19267	0.27972	0.17276	0.17002
	Winter Delivery Charge (Nov-Apr, \$/Ccf)	0.38588	-	-	-	-
	Summer Delivery Charge (May - Oct, \$/Ccf)	0.43923	-	-	-	-
Liberty Midstates' SEMO District	Customer Charge	\$ 17.50	\$ 27.00	\$ 155.00	\$ 750.00	\$ 750.00
	Delivery Charge (\$/Ccf)	0.27806	0.11638	0.26407	0.20334	0.20179

Table 5. Liberty Midstates' Current Rates		Residential	Small General Service	Medium General Service	Large General Service	Interruptible
Liberty Midstates' NEMO/WEMO Districts	Customer Charge	\$ 22.00	\$ 33.79	\$ 136.13	\$ 750.00	\$ 650.00
	Delivery Charge (\$/Ccf)	-	0.14216	0.27711	0.17276	0.17002
	Winter Delivery Charge (Nov-Apr, \$/Ccf)	0.33607	-	-	-	-
	Summer Delivery, ≤30 Ccf (May - Oct, \$/Ccf)	0.32935	-	-	-	-
	Summer Delivery, >30 Ccf (May - Oct, \$/Ccf)	0.38193	-	-	-	-
Liberty Midstates' SEMO District	Customer Charge	\$ 15.00	\$ 25.10	\$ 140.00	\$ 750.00	\$ 750.00
	Delivery Charge (\$/Ccf)	-	0.08312	0.23906	0.20334	0.20179
	Winter Delivery Charge (Nov-Apr, \$/Ccf)	0.24335	-	-	-	-
	Summer Delivery, ≤30 Ccf (May - Oct, \$/Ccf)	0.24335	-	-	-	-
	Summer Delivery, >30 Ccf (May - Oct, \$/Ccf)	0.24350	-	-	-	-

Staff's specific rate recommendations provided above are highly dependent on the overall revenue requirement and on mitigation of customer impact. Staff will continue to evaluate the costs and revenues for each rate district and each rate class, and if there are significant changes in cost drivers across rate classes and rate districts, Staff will adjust the recommendation accordingly.

Q. What considerations went into Staff's recommended rate design?

A. As discussed in the CCOS, one consideration is that no class should receive a decrease from current rates while another class receives a rate increase. For the NEMO/WEMO

1 residential class, Staff is concerned with the overall impact on these customers during winter.
2 To mitigate the impacts of the rate increase in those months, Staff maintained different summer
3 and winter delivery charges. The CCOS also indicated that the delivery charges of the SGS
4 class for both districts were relatively too low.

5 Q. Did Staff consider consolidation of the SEMO district with the
6 NEMO/WEMO district?

7 A. Yes. However, the resulting CCOS indicated that the residential and small
8 general service classes were too far apart to be considered for rate consolidation. Additionally,
9 Staff is concerned that subsequent revisions of information used in the COS Report could affect
10 the current recommended rate structure for the larger classes⁴.

11 Q. Would Staff be open to consolidating the rates of the medium and large general
12 service classes and interruptible classes?

13 A. Yes. Currently Staff is not recommending an increase to the large general
14 service or interruptible rate classes, but if Staff were to consolidate these classes, it would
15 recommend moving to the higher of the current rates in the respective class and using the
16 differences to mitigate the overall rate impact on the residential and small general
17 service classes.

18 Q. Does this conclude your testimony?

19 A. Yes it does.

⁴ E.g. Direct Testimony of Staff witness Justin Tevie, p. 5, ll. 15-18, p. 7 ll. 2-4; Direct Testimony of Staff witness Lisa M. Ferguson, p. 9 ll. 7-10; Direct Testimony of Staff witness Marina Stever, p. 7 ll. 12-16.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Request of Liberty)
Utilities (Midstates Natural Gas) Corp.) Case No. GR-2024-0106
d/b/a Liberty to Implement a General Rate)
Increase for Natural Gas Service in the)
Missouri Service Areas of the Company)

AFFIDAVIT OF MICHAEL L. STAHLMAN

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW MICHAEL L. STAHLMAN and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Direct Testimony of Michael L. Stahlman*, and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

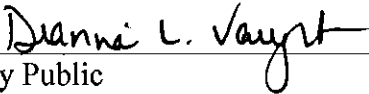


MICHAEL L. STAHLMAN

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 30th day of July 2024.

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2027
Commission Number: 15207377



Notary Public

Michael L. Stahlman

Education

- 2009 M. S., Agricultural Economics, University of Missouri, Columbia.
2007 B.A., Economics, Summa Cum Laude, Westminster College, Fulton, MO.

Professional Experience

- 2010 - Regulatory Economist, Missouri Public Service Commission
2007 – 2009 Graduate Research Assistant, University of Missouri
2008 Graduate Teaching Assistant, University of Missouri
2007 American Institute for Economic Research (AIER) Summer Fellowship Program
2006 Price Analysis Intern, Food and Agricultural Policy Research Institute (FAPRI), Columbia, MO
2006 Legislative Intern for State Representative Munzlinger
2005 – 2006 Certified Tutor in Macroeconomics, Westminster College, Fulton, MO
1998 – 2004 Engineering Watch Supervisor, United States Navy

Expert Witness Testimony

- Union Electric Company d/b/a AmerenUE GR-2010-0363
In the Matter of Union Electric Company d/b/a AmerenUE for Authority to File Tariffs Increasing Rates for Natural Gas Service Provided to Customers in the Company's Missouri Service Area
- Union Electric Company d/b/a Ameren Missouri GT-2011-0410
In the Matter of the Union Electric Company's (d/b/a Ameren Missouri) Gas Service Tariffs Removing Certain Provisions for Rebates from Its Missouri Energy Efficient Natural Gas Equipment and Building Shell Measure Rebate Program
- KCP&L Great Missouri Operations Company EO-2012-0009
In the Matter of KCP&L Greater Missouri Operations Company's Notice of Intent to File an Application for Authority to Establish a Demand-Side Programs Investment Mechanism
- Union Electric Company d/b/a Ameren Missouri EO-2012-0142
In the Matter of Union Electric Company d/b/a Ameren Missouri's Filing to Implement Regulatory Changes Furtherance of Energy Efficiency as Allowed by MEEIA
- Kansas City Power & Light Company EO-2012-0323
In the Matter of the Resource Plan of Kansas City Power & Light Company
- KCP&L Great Missouri Operations Company EO-2012-0324
In the Matter of the Resource Plan of KCP&L Greater Missouri Operations Company
- Kansas City Power & Light Company EO-2012-0135
KCP&L Great Missouri Operations Company EO-2012-0136
In the Matter of the Application of Kansas City Power & Light Company [KCP&L Great Missouri Operations Company] for Authority to Extend the Transfer of

Functional Control of Certain Transmission Assets to the Southwest Power Pool, Inc.

Kansas City Power & Light Company, KCP&L Great Missouri Operations Company, and Transource Missouri EA-2013-0098
EO-2012-0367

In the Matter of the Application of Transource Missouri, LLC for a Certificate of Convenience and Necessity Authorizing it to Construct, Finance, Own, Operate, and Maintain the Iatan-Nashua and Sibley-Nebraska City Electric Transmission Projects

Kansas City Power & Light Company EU-2014-0077
KCP&L Great Missouri Operations Company

In the Matter of the Application of Kansas City Power & Light Company and KCP&L Greater Missouri Operations Company for the Issuance of an Accounting Authority Order relating to their Electrical Operations and for a Contingent Waiver of the Notice Requirement of 4 CSR 240-4.020(2)

Kansas City Power & Light Company EO-2014-0095

In the Matter of Kansas City Power & Light Company's Notice of Intent to File an Application for Authority To Establish a Demand-Side Programs Investment Mechanism

Veolia Energy Kansas City, Inc HR-2014-0066

In the Matter of Veolia Energy Kansas City, Inc for Authority to File Tariffs to Increase Rates

Grain Belt Express Clean Line, LLC EA-2014-0207

In the Matter of the Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity Authorizing It to Construct, Own, Operate, Control, Manage, and Maintain a High Voltage, Direct Current Transmission Line and an Associated Converter Station Providing an Interconnection on the Maywood - Montgomery 345 kV Transmission Line

Union Electric Company d/b/a Ameren Missouri ER-2014-0258

In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariff to Increase Its Revenues for Electric Service

Empire District Electric Company ER-2014-0351

In the Matter of The Empire District Electric Company for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in the Company's Missouri Service Area

Kansas City Power & Light Company ER-2014-0370

In the Matter of Kansas City Power & Light Company's Request for Authority to Implement a General Rate Increase for Electric Service

Kansas City Power & Light Company EO-2014-0240

In the Matter of Kansas City Power & Light Company's Filing for Approval of Demand-Side Programs and for Authority to Establish a Demand-Side Programs Investment Mechanism

KCP&L Great Missouri Operations Company In the Matter of KCP&L Greater Missouri Operations Company's Filing for Approval of Demand-Side Programs and for Authority to Establish a Demand-Side Programs Investment Mechanism	EO-2014-0241
Ameren Transmission Company of Illinois In the Matter of the Application of Ameren Transmission Company of Illinois for Other Relief or, in the Alternative, a Certificate of Public Convenience and Necessity Authorizing it to Construct, Install, Own, Operate, Maintain and Otherwise Control and Manage a 345,000-volt Electric Transmission Line from Palmyra, Missouri to the Iowa Border and an Associated Substation Near Kirksville, Missouri	EA-2015-0146
Empire District Electric Company In the Matter of The Empire District Electric Company's Request for Authority to Implement a General Rate Increase for Electric Service	ER-2016-0023
KCP&L Great Missouri Operations Company In the Matter of KCP&L Greater Missouri Operations Company's Request for Authority to Implement a General Rate Increase for Electric Service	ER-2016-0156
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Request for Authority to Implement A General Rate Increase for Electric Service	ER-2016-0285
Union Electric Company d/b/a Ameren Missouri In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariff to Increase Its Revenues for Electric Service	ER-2016-0179
Grain Belt Express Clean Line, LLC In the Matter of the Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity Authorizing it to Construct, Own, Operate, Control, Manage and Maintain a High Voltage, Direct Current Transmission Line and an Associated Converter Station Providing an Interconnection on the Maywood-Montgomery 345kV transmission line.	EA-2016-0358
Spire Missouri, Inc. In the Matter of Spire Missouri, Inc.'s Request to Increase Its Revenues for Gas Service	GR-2017-0215 and GR-2017-0216
Liberty Utilities In the Matter of Liberty Utilities (Midstates Natural Gas) Corp. d/b/a Liberty Utilities' Tariff Revisions Designed to Implement a General Rate Increase for Natural Gas Service in the Missouri Service Areas of the Company	GR-2018-0013
Spire Missouri, Inc. In the Matter of Spire Missouri, Inc. d/b/a Spire's Request to Decrease [Increase] WNAR	GO-2019-0058 and GO-2019-0059
Grain Belt Express Clean Line LLC Invenergy Transmission LLC	EM-2019-0150

Invenergy Investment Company LLC
 In the Matter of the Joint Application of Invenergy Transmission LLC, Invenergy Investment Company LLC, Grain Belt Express Clean Line LLC and Grain Belt Express Holding LLC for an Order Approving the Acquisition by Invenergy Transmission LLC of Grain Belt Express Clean Line LLC

Union Electric Company d/b/a Ameren Missouri GR-2019-0077
 In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Increase its Revenues for Natural Gas Service

Union Electric Company d/b/a Ameren Missouri ER-2019-0335
 In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Decrease Its Revenues for Electric Service

Empire District Electric Company ER-2019-0374
 In the Matter of The Empire District Electric Company's Request for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in its Missouri Service Area

Union Electric Company d/b/a Ameren Missouri EA-2020-0371
 In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and a Certificate of Public Convenience and Necessity Under 20 CSR 4240-3.105

Spire Missouri, Inc. GR-2021-0108
 In the Matter of Spire Missouri Inc.'s d/b/a Spire Request for Authority to Implement a General Rate Increase for Natural Gas Service Provided in the Company's Missouri Service Areas

Union Electric Company d/b/a Ameren Missouri ER-2021-0240
 In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Electric Service

Union Electric Company d/b/a Ameren Missouri GR-2021-0241
 In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Natural Gas Service

The Empire District Electric Company ER-2021-0312
 In the Matter of the Request of The Empire District Electric Company d/b/a Liberty for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in its Missouri Service Area

The Empire District Gas Company GR-2021-0320
 In the Matter of The Empire District Gas Company's d/b/a Liberty Request to File Tariffs to Change its Rates for Natural Gas Service

Ameren Transmission Company of Illinois EA-2022-0099
 In the Matter of the Application of Ameren Transmission Company of Illinois for a Certificate of Convenience and Necessity Under Section 393.170.1, RSMo. Relating to Transmission Investments in Southeast Missouri

Evergy Metro, Inc d/b/a Evergy Missouri Metro In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro’s Request for Authority to Implement A General Rate Increase for Electric Service	ER-2022-0129
Evergy Missouri West, Inc. d/b/a Evergy Missouri West In the Matter of Evergy Missouri West, Inc. d/b/a Evergy Missouri West’s Request for Authority to Implement A General Rate Increase for Electric Service	ER-2022-0130
Spire Missouri, Inc. In the Matter of Spire Missouri, Inc. d/b/a Spire's Request for Authority to Implement a General Rate Increase for Natural Gas Service Provided in the Company’s Missouri Service Areas	GR-2022-0179
Union Electric Company d/b/a Ameren Missouri In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Approval of a Subscription-Based Renewable Energy Program	EA-2022-0245
Union Electric Company d/b/a Ameren Missouri In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Electric Service	ER-2022-0337
Grain Belt Express Clean Line LLC In the Matter of the Application of Grain Belt Express LLC for an Amendment to its Certificate of Convenience and Necessity Authorizing it to Construct, Own, Operate, Control, Manage, and Maintain a High Voltage, Direct Current Transmission Line and Associated Converter Station	EA-2023-0017
Union Electric Company d/b/a Ameren Missouri In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and Certificates of Public Convenience and Necessity Authorizing it to Construct Renewable Generation Facilities	EA-2023-0286
Evergy Metro, Inc d/b/a Evergy Missouri Metro Evergy Missouri West, Inc. d/b/a Evergy Missouri West In the Matter of Requests for Customer Account Data Production from Evergy Metro, Inc. d/b/a Evergy Missouri Metro and Evergy Missouri West, Inc. d/b/a Evergy Missouri West	EO-2024-0002

Selected Manuscripts

Stahlman, Michael and Laura M.J. McCann. “Technology Characteristics, Choice Architecture and Farmer Knowledge: The Case of Phytase.” *Agriculture and Human Values* (2012) 29: 371-379.

Stahlman, Michael. “The Amorality of Signals.” Awarded in top 50 authors for SEVEN Fund essay competition, “The Morality of Profit.”

Selected Posters

Stahlman, Michael, Laura M.J. McCann, and Haluk Gedikoglou. “Adoption of Phytase by Livestock Farmers.” Selected poster at the American Agricultural Economics

Association Annual Meeting, Orlando, FL, July 27-29, 2008. Also presented at the USDA/CSREES Annual Meeting in St. Louis, MO in February 2009.

McCann, Laura, Haluk Gedikoglu, Bob Broz, John Lory, Ray Massey, and Michael Stahlman. "Farm Size and Adoption of BMPs by AFOs." Selected poster at the 5th National Small Farm Conference in Springfield, IL in September 2009.

Schedule MLS-2

A. Fundamental Concepts of Gas Class-Cost-of-Service

Billing Determinants: the quantity of each charge type to be billed to collect an allowed revenue requirement. Every charge type that appears in a company's rate structure must have an associated billing determinant. Usage-related billing determinants are developed from the normalized and annualized usages and revenues Staff developed as part of its Cost of Service filing.

The normalized and annualized usages and revenues developed by Staff serve two purposes in each rate case. The first purpose is to determine the normalized and annualized level of revenue that is generated by existing tariffs. The second purpose is, along with the ordered revenue requirement resulting from a case, to determine the appropriate value for each rate element to be included in the compliance tariff sheets. This latter usage is commonly referred to as billing determinants.

Cost of Service: prudently incurred expenses and return on investment to provide safe and adequate service to its customers for a given time period in a given retail jurisdiction.

Class Cost of Service (CCOS) Study: a continuation and refinement of Staff's Cost-of-Service Revenue Requirement Study, resulting in an estimate of the non-gas costs incurred in providing natural gas service to each customer class of a utility in a time period.

The Staff CCOS Study consists of the following steps: 1) costs are categorized (functionalized) based upon the specific role they play in the operations of a utility; 2) costs are classified by whether they are customer related, demand related, or energy related; and 3) functionalized/classified costs are allocated to customer classes. The sum of all allocated costs to a customer class is called that class' cost of service.

The cost of service of each customer class is compared to the annualized, normalized revenues the utility collects from each class through its non-gas rates, plus each class' allocated share of revenues from other revenues. The results of a CCOS Study are expressed in terms of additional revenue, if any, required from each class for the utility to recover its cost of serving that class.

Cost Allocation: a procedure by which common or joint costs are apportioned among customers or classes of customers.

Cost Functionalization: the grouping of rate base and expense accounts according to the specific function they play in the operations of a utility.

Rate Design: Rate design is the relative pricing of one element of a rate structure to another, within or across classes. Cost causation is typically the driving factor of rate design, although other policies must be considered including minimization of rate shock to any one customer class or customers within a class, meeting of incremental costs, rate continuity, rate

stability, revenue stability, consideration of promotional practices, and impact on energy efficiency policies. For purposes of rate design, cost causation is typically deemed as the distribution of costs that results from the allocation of a vertically integrated utility's gross revenue requirement net of other revenues. It is necessary to make an exception to this general assumption in certain instances when considering costs that would not be incurred but-for a customer, such as the cost of energy purchased through the integrated energy market to serve a customer.

Rate Design Study: while a CCOS Study focuses on the revenue responsibility of customer classes, a rate design study focuses on both the equitable pricing of the individual customers within each class and sending the proper price signal to customers. The purpose of the rate design process is to recover costs in each time period from each rate component for each customer in a way that equates the cost of providing service with the amount the customer is billed in accordance with the rate schedule.

Rate Schedule: one or more tariff sheets that describe the availability requirements and prices applicable to a particular type of retail gas service. A customer class used in a CCOS Study may consist of one or more rate schedules.

Rate Structure: rate structure is composed of the various types of monthly prices charged for the utility's products or services. At the most basic level there are:

- charges of a fixed dollar amount to be paid each month irrespective of the amount of the product taken and designed to collect the costs of providing service that do not vary by customer usage;
- charges of a variable monthly dollar amount that are described as a price per unit charged on the total units of the product consumed over the month and that are designed to collect the costs of providing service that do vary by customer usage.

Customers who use large amounts of natural gas, typically industrial customers, may also include a demand element based on an estimate of maximum daily usage. Natural gas utilities also include purchased gas adjustment (PGA) charges as an element of a customer's bill, which are intended to "pass-through" the wholesale cost of natural gas; this is not typically included in the discussion of retail revenue recovery.

A good rate structure is a compromise between the complexity necessary to match cost causation to revenue recovery as precisely as possible and the level of understandability and predictability of bills and revenues desired by utilities, customers, and regulators. The tension between the interest in providing revenue stability and indicating cost causation should also be considered when reasonably designing rates and selecting rate structure components. Changes to rate structure may require additional metering or customer information system investment, and the cost of that investment should be weighed against the benefit of the increased complexity.

Rate Values (Rates): the per-unit prices the utility charges to provide service to its customers. Rates are expressed as dollars per unit of volume (Ccf, Mcf) or per unit of energy (MMBtu, therm), etc.

Revenue neutral: the revenue shifts among classes do not change the utility's total system revenues.

Tariff: a document filed by a regulated entity with either a federal or state commission, listing the rates (prices) the regulated utility will charge to provide service to its customers as well as the terms and conditions that it will follow in providing service.

B. Units of Measurement:

Btu: British thermal unit.

MMBtu: one million Btus. One MMBtu is approximately the amount of energy contained in 1,000 Cf (or 1 Mcf) of natural gas, 83.3 pounds of coal, 10.917 gallons of propane, 8 gallons of gasoline, or 293.083 kWh or electricity.

Ccf: a unit of volume of one hundred cubic feet of natural gas, which contains approximately 1,000 Btus of energy.

Therm: 100,000 Btus of energy, approximately equal to the energy contained in 100 Cf of natural gas.