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Witness:	Michael S. Scheperle
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MISSOURI PUBLIC SERVICE COMMISSION

REGULATORY REVIEW DIVISION

REBUTTAL TESTIMONY

OF

MICHAEL S. SCHEPERLE

KCP&L GREATER MISSOURI OPERATIONS COMPANY

CASE NO. ER-2012-0175

Jefferson City, Missouri
September 2012

Staff Exhibit No. 287
Date 10/17/12 Reporter MP
File No. ER-2012-0175

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of KCP&L Greater Missouri Operations Company's Request for Authority to Implement General Rate Increase for Electric Service	))))	Case No. ER-2012-0175

AFFIDAVIT OF MICHAEL S. SCHEPERLE

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

Michael S. Scheperle, of lawful age, on his oath states: that he has participated in the preparation of the following Rebuttal Testimony in question and answer form, consisting of 14 pages of Rebuttal Testimony to be presented in the above case, that the answers in the following Rebuttal Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true to the best of his knowledge and belief.

Michael S. Scheperle
Michael S. Scheperle

Subscribed and sworn to before me this 12th day of September, 2012.

SUSAN L. SUNDERMEYER
Notary Public - Notary Seal
State of Missouri
Commissioned for Callaway County
My Commission Expires: October 03, 2014
Commission Number: 10942086

Susan L. Sundermeyer
Notary Public

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CASE NO. ER-2012-0175

Q. Please state your name and business address.

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

Q. Are you the same Michael S. Scheperle who filed on August 21, 2012, direct testimony in question and answer format and as part of the Missouri Public Service Commission Staff's ("Staff's") Rate Design and Class Cost-of-Service Report ("CCOS Report")?

A. Yes, I am.

Q. What is the purpose of your rebuttal testimony?

A. I explain Staff's disagreement with certain parts of the class cost-of-service ("CCOS") studies of Mr. Paul M. Normand and Mr. Maurice Brubaker. Mr. Normand is testifying for GMO and Mr. Brubaker is testifying for Ag Processing Inc., Federal Executive Agencies, Midwest Energy Consumer's Group, Midwest Energy Users' Association, and Missouri Industrial Energy Consumers; collectively "Industrials." The Industrials filed three (3) CCOS studies. These CCOS studies could lead to a rate design that the Commission should not adopt. As part of that explanation I compare the results of each of the five CCOS studies presented in direct testimony in this case. I also address a Southern Union Company

d/b/a Missouri Gas Energy ("MGE") rate design recommendation to eliminate certain residential rate schedules.

I specifically address:

- Rate Design Recommendations
- MGE's proposal to eliminate certain residential rate schedules
- Intra-class revenue shifts
- Production allocators

Q. Who is the witness for MGE that sponsors eliminating certain residential rate schedules?

A. F. Jay Cummings

Rate Design Recommendations

Q. Why did you prepare a summary of the CCOS study results that the parties presented in their direct cases?

A. Because CCOS studies are not precise they should be used only as a guide for designing rates. Staff finds it helpful to compare the studies when analyzing them for that guidance, and believes the Commission may as well.

Q. Where is that summary?

A. It appears in the following tables, Table 1 and Table 2.

Table 1 – MPS Rate District

Summary Results of Class Cost of Service Results INDEX OF RETURN					
			Industrials		
Customer Class	GMO MPS	Staff	A&E 4NCP	A&E 2NCP	4CP
RESIDENTIAL (RES)	0.96	0.91	0.78	0.77	0.79
General Use	1.04				
Space Heating	0.84	0.96			
Other	1.92				
General & Other Use		0.88			
SMALL GENERAL SERVICE (SGS)	1.36	1.26	1.40	1.44	1.34
Primary	0.93	0.88			
Secondary	1.36	1.21			
No Demand	1.34				
Short Term	1.32				
No Demand & Short Term		1.78			
LARGE GENERAL SERVICE (LGS)	1.05	1.09	1.24	1.21	1.22
Primary	0.63				
Secondary	1.06				
Primary & Secondary		1.09			
LARGE POWER SERVICE (LPS)	0.80	1.12	1.31	1.36	1.28
Primary	0.76	1.21			
Secondary	0.84	1.05			
LIGHTING	1.17	0.69	1.35	1.35	1.63

Table 2 – L&P Rate District

Summary Results of Class Cost of Service Results INDEX OF RETURN					
			Industrials		
Customer Class	GMO L&P	Staff	A&E 4NCP	A&E 2NCP	4CP
RESIDENTIAL (RES)	0.83	0.71	0.61	0.62	0.61
General Use	1.06				
Space Heating	0.60	0.32			
Other	0.58				
General & Other Use		1.10			
GENERAL SERVICE (GS)	1.97	1.98	1.52	1.56	1.68
General Use	1.99	1.79			
Limited Demand	2.02				
Separately Metered SH/WH	0.50	0.06			
Short Term	2.02				
Limited Demand & Short Term		2.56			
LARGE GENERAL SERVICE (LGS)	1.37	1.22	1.36	1.33	1.40
Substation	1.23				
Primary	1.17				
Secondary	1.37				
Primary, Secondary & Substation		1.22			
LARGE POWER SERVICE (LPS)	0.81	1.14	1.28	1.25	1.16
Primary	0.74	1.11			
Secondary	0.76	1.05			
Substation	0.98	1.42			
Transmission	1.42	1.87			
LIGHTING - Metered	-2.76				
LIGHTING - Non-Metered	4.70				
Lighting - Combined		1.44	2.26	2.26	3.24

The studies are compared in the tables based on their relative Indices of Return. An Index of Return above 1.0 indicates revenue from the customer class exceeds GMO's cost of providing service to that class; therefore, to equalize revenues and cost of service, rate revenues should be reduced, i.e., the class has overpaid. An Index of return below 1.0 indicates revenue from the class is less than GMO's cost of providing service to that class; therefore, to equalize revenues, and cost of service, rate revenues should be increased, i.e., the class has underpaid. Table 1 compares the Indices of Return for the CCOS studies filed in this case for GMO's MPS rate district and Table 2 shows them for the L&P rate district.

Q. You testified that CCOS studies are not precise and should only be used as a guide for designing rates. Should the Commission consider anything other than CCOS study results when designing rates?

A. Yes. It should also consider customer bill impacts, utility revenue stability, rate stability and public acceptance. Based on its CCOS study results and judgment, Staff recommends no revenue neutral adjustments to any of GMO's rate schedules.

Q. Are there differences in the CCOS studies in terms of the rate classifications used in them?

A. Yes. Only GMO and Staff filed CCOS studies based on GMO's rate classes for MPS and L&P. The three studies the Industrials filed were performed on groups of rate classes made by aggregating similar rate classes. These groups are Residential ("RES"), Small General Service ("SGS"), General Service ("GS"), Large General Service ("LGS"). Large Power Service ("LPS") and Lighting.

Q. Why didn't Staff aggregate rate classes into groups in its study?

A. Staff examined each rate class's revenue responsibility and recommends rates that attempt to move rate elements closer to cost of service, to enhance the price signals given to customers. If groups of rate classes are moved the same way (revenue neutral increase/decrease), some rate classes within that rate group may be moved in the wrong direction from GMO's cost to serve that rate class. For example, the aggregated GS Group in the L&P rate district is overpaying GMO's cost to serve it, but the separately metered space heating/water heating rate class within that group is not. Adjusting the GS Group with a revenue neutral-decrease applied equally to all the GS rate classes would further distort the rates of the separately metered space heating/water heating rate class within that group, unless appropriate intraclass shifts are implemented.

Q. Is Staff recommending any intraclass rate shifts?

A. Yes. Staff recommends in this case that the Commission move rate classes closer to GMO's cost to serve the class for the winter season in the L&P rate district. Staff recommends the Commission impose an additional 6% increases 1) for the two winter energy block rates of the MO 920 rate class (residential service with space heating), 2) for the winter energy rate of the MO 922 frozen rate class (residential space heating/water heating – separate meter), and 3) for the winter energy rate of the MO 941 Frozen rate class (non-residential space heating/water heating – separate meter). These adjustments will bring the winter season rates in the L&P district closer to GMO's costs to serve these classes in the winter season.

Q. Does Staff agree with GMO's rate design recommendations?

A. No. GMO is proposing that its requested rate increase be spread to all customer classes in three components. The first component is for GMO's Missouri Energy Efficiency Investment Act ("MEEIA") program revenue responsibility per class of customer.

GMO's filing indicates that $19.8 million is the MEEIA portion of its total request of $83.5 million. The second component is for the fuel and purchased power costs that GMO would recover through its Fuel Adjustment Clause ("FAC") if its FAC were not rebased. The FAC portion of the requested increase is approximately $10.3 million. The third component is the remainder of the increase. GMO proposes that the remainder of the increase be spread to all customer classes and all rate components on an equal percentage basis. This methodology may significantly alter the amount of the increase to individual customer classes.

Staff's recommendation does not include segregating certain components of the increase as recommended by GMO such as MEEIA, FAC, and other. Staff correctly applies these components in its CCOS study and makes revenue neutral adjustments based on its CCOS study. Staff's recommendation brings customer classes closer to its cost of service. The rate design, and true-up in subsequent rate cases as being negotiated in MEEIA Case No. EO-2012-0009, will make sure that each class recovers the MEEIA costs that it incurs as required by MEEIA. The FAC reflects the amount of fuel and purchased power costs as contained in this case for each GMO rate district. Again, Staff does not recommend segregating costs per customer class as this may alter the amount of increase to individual customer classes.

Q. Does Staff agree with MGE's rate design recommendation to eliminate certain residential rate schedules?

A. Not entirely. MGE recommends revenue-neutral adjustments in current rates on the residential schedules for both MPS and L&P. MGE also recommends that the separate Residential Electric Space Heating schedules be eliminated and the customers served under these rate schedules be transferred to the Consolidated General Use schedules. Staff

recommends the Commission not go so far and, instead, make winter rate adjustments for L&P of an additional 6% for the MO 920 and MO 922 winter energy block rate element. These adjustments will bring the winter season rates closer to GMO's cost to serve this class in the winter season. At this time, Staff does not support MGE's recommendation to eliminate the residential rate schedules mentioned above due to some customers receiving a large increase. For example, Staff computed an L&P residential customer with Space heating using 1,000 kWh per month in the summer and 1,500 kWh per month in the winter. Eliminating the L&P residential rate for space heating and transferring his usage to the residential General Use rate schedule would increase his annual bill by approximately 19%. Staff does not oppose retaining the all-electric residential rates, but recommends that customers on such rate schedule(s) be moved toward GMO's cost to serve them.

Q. Does Staff agree with the Industrials' rate design recommendation to move each MPS and L&P rate class roughly 25% of the way toward GMO's costs to serve the class?

A. No. The Industrials' rate design recommendation would mean an overall revenue-neutral increase of about 1.4% on the Residential class in the MPS rate district and 2.4% in the L&P rate district. (Brubaker, Direct Testimony, p. 29) However, Staff does not support the Industrials' recommendation, because its recommendation is based on looking at groups of rate classes, and when those groups are disaggregated, the CCOS results for some of the individual rate classes would move differently than if treated as part of the aggregate.

Class Cost-of-Service Study Allocators

Q. Who has presented CCOS study results in this case?

A. The Staff, GMO, and the Industrials (three studies) presented CCOS study results. The Office of the Public Counsel ("OPC") and MGE did not.

Q. Did they all use the same parameters in their CCOS studies

A. No.

Q. Did other parties use parameters with which Staff does not agree?

A. Yes. The Staff disagrees with the production allocators the other parties used. Since the production costs allocated with the production cost allocators (Production-fixed and Production-variable), comprise approximately 66% (MPS) and 71% (L&P) of GMO's costs to serve each rate district, Staff is limiting its rebuttal testimony to the other parties' choices of production allocators.

Production-Capacity Allocator

Q. What is production-capacity?

A. Production-capacity is the ability of the power system components to adequately serve the system load requirements. It includes the utility's generating plants, production operation expenses and production maintenance expenses less fuel expenses.

Q. What is the purpose of a production-capacity allocator?

A. It is used to allocate the rate base investment and related production expenses of generating facilities that are necessary to supply customers' service requirements each month during the period of maximum - or "peak" - level of system power consumption that month.

Q. What are the different production-capacity allocators the parties used?

A. For both MPS and L&P, GMO used a Base, Intermediate and Peak ("BIP") method. Staff used a different BIP Method. The Industrials used two different Average and Excess Methods in two of their studies (A&E 4-NCP and A&E 2-NCP) and a 4 CP method in their third study. The Industrials' primary recommendation for allocating production-capacity is to use the Average and Excess 4-NCP method.

Q. Does Staff agree with GMO's Production–Capacity allocator method?

A. No. Both GMO and Staff used a BIP methods of allocating production investment and costs. BIP methods take into consideration the differences in the capacity/energy cost trade-off that exists across a company's generation mix. The BIP methodologies give weight to both capacity and energy considerations. They do so by considering energy in the base component through the allocation of base units to all classes and by considering capacity in the allocation of intermediate and peak components.

Staff and GMO used different methods for allocating the base component, intermediate component, and the peak component. GMO used the following method to allocate production:

- Base - Lowest monthly (non-zero usage) for each rate class. Assigns certain generating plants as Base units.
- Intermediate - 12 CP Remaining less Base. Assigns certain generating plants as intermediate units.
- Peak - 4 CP remaining less Base less Intermediate. Assigns certain generating plants as Peak units.

Staff used the following method to allocate production-capacity:

- Base – Annual kWh usage at generation for each rate schedule
- Intermediate – 12 NCP average less Base
- Peak – 4 NCP remaining less Base and Intermediate

The largest difference between Staff's and GMO's BIP methods is that GMO bases its BIP production method by assigning certain generating plants to a Base unit, Intermediate

unit, or Peak unit with all investment and expenses allocated on its specific component in the BIP methodology (Base or Intermediate or Peak). Staff bases its BIP methodology on kilowatt ("KW") and kilowatt-hours ("kWh") usage at generation within the Base, Intermediate or Peak component. In this case GMO's methodology disproportionately allocates energy to certain classes, as detailed in Table 3 (MPS) and Table 4 (L&P) below.

Table 3 - MPS

BIP Components	Staff %	KCPL %	Investment %
Base Component	47.85%	46.12%	71.63%
Intermediate Component	38.68%	0.00%	0.00%
Peak Component	13.47%	53.88%	28.37%
Total	100.00%	100.00%	100.00%

Table 4 – L&P

BIP Components	Staff %	KCPL %	Investment %
Base Component	56.06%	55.36%	82.21%
Intermediate Component	38.50%	0.00%	0.00%
Peak Component	5.44%	44.64%	17.79%
Total	100.00%	100.00%	100.00%

Paul M. Normand proposes the GMO generating plant mix for MPS as 46.12% for the Base component, 0% for the intermediate component, and 53.88% for the peak component. Assigning generating plant investments to a specific component, GMO assigns for MPS approximately 72% to the investment base component and approximately 28% to the peak component. Likewise, GMO proposes the generating mix as 55.36% for L&P for the Base component, 0% for the intermediate component, and 44.64% for the peak component. Assigning generating plant investments to a specific component, GMO assigns for L&P

approximately 82% to the investment base component and approximately 18% to the peak component. In essence, GMO uses a base allocator of approximately 72% for MPS compared to Staff's base allocator of approximately 48% for investment and a base allocator of approximately 82% for L&P compared to Staff's base allocator of approximately 56%. Staff believes (in this case) that GMO-MPS and GMO-L&P percentage differences distort the percentage allocation to each BIP component by allocating over 71% (MPS) and over 82% (L&P) of the investment with base load plants essentially on the basis of energy. GMO is assuming that base load plants don't provide capacity value. All generating plants provide capacity and energy value.

Q. Does Staff agree with the Industrials' Production – Capacity allocator method?

A. Not entirely. The Industrials filed three CCOS studies for both MPS and L&P. Two of the studies are based on Average and Excess (A&E) method. The two A&E methods are an A&E 4-NCP method and an A&E 2-NCP method. The other Industrials' CCOS study is a 4CP CCOS study.

Q. Would you explain the A&E method?

A. The A&E method consists of two components. The first component of each class's allocation factor is its proportion of the class' total average demand (based on energy consumption) times the system load factor. This is the same as Staff's Base component in its BIP study, with equal weighting of 47.85% for MPS and 56.06% for L&P. The second component in the A&E method is called the "excess" demand factor. This component is multiplied by the remaining proportion of production usage (1 minus system load factor). The first and second components (Average and Excess components) are then added to obtain the total allocator. The average piece is simply the total kWh usage divided by the total number

of hours in the year for each class, while the demand piece is each class's contribution to the system peak load (or to a specified group of system peak demands). The average piece in the A&E method is the same as Staff's base piece in the BIP method, as both use the annual kWh at generation converted to KW load. The difference in approach between the A&E method and Staff's BIP method is in how the demand piece is determined. Both approaches use NCP information for the demand piece. The Industrials' use the "Excess" piece using four (A&E 4-NCP) class peaks to determine the "Excess" piece less the average already allocated. Staff's BIP uses NCP, but separates the remaining capacity piece into two components (an intermediate and peak component).

Q. Why is Staff's BIP method superior?

A. Staff's BIP generation allocation factor is generally consistent with the A&E method used by Mr. Brubaker. However, Staff's approach uses all monthly peaks in the Intermediate component and four monthly peaks from the summer in its Peak component. Since generation facilities are built to satisfy the demand for electricity throughout the year at the lowest cost, it is reasonable to allocate part of the production-capacity allocator (intermediate piece) on loads throughout the year. Then the peak component of the BIP method may be allocated to satisfy the peak portion less the base and intermediate component already allocated to each class based on each class' usage characteristics. Generation facilities are built to meet the entire load of the electric utility at every point in time. The BIP production allocator is a more reasonable approach because peak load is a function of the total loads of each class based on a base, intermediate and peak load requirement, not just the average and excess loads of each class.

Q. Does Staff agree with the Industrials' Production – Capacity allocator method using the 4CP method for MPS and L&P?

A. No. The Industrials' filed CCOS studies for MPS and L&P on a 4 CP method. Staff is concerned that studies relying on 4CP information could be distorted. For example, using this methodology there can be free ride allocation for off-peak usage. Free ridership is when service rendered completely or mostly off-peak is not assigned any or very little responsibility for capacity costs. An example of the free ridership that may occur is with street lighting. Street lights are not on during the day. Using this method street lighting would be allocated no capacity costs at all if the peak occurred during daylight hours. This apparently occurred in the Industrials' 4CP allocations where the Lighting Index of Return on my Table 2 above shows a 3.24 (revenue far exceeds cost to serve) for the L&P rate district. The other parties' CCOS studies show more modest Index of Returns for the Lighting class, alleviating any free ride concerns with that class in those studies.

Q. Does this conclude your rebuttal testimony?

A. Yes, it does.