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Witness:	Sarah Kliethermes
Sponsoring Party:	MO PSC Staff
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MISSOURI PUBLIC SERVICE COMMISSION

REGULATORY REVIEW DIVISION

REBUTTAL TESTIMONY

OF

SARAH KLIETHERMES

KANSAS CITY POWER & LIGHT COMPANY

CASE NO. ER-2014-0370

Jefferson City, Missouri
May 2015

Staff Exhibit No. 219
Date 6-15-15 Reporter AT
File No. ER-2014-0370

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Kansas City Power & Light Company's Request for Authority to Implement a General Rate Increase for Electric Service))))	File No. ER-2014-0370

AFFIDAVIT OF SARAH KLIETHERMES

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

Sarah Kliethermes, of lawful age, on her oath states: that she has participated in the preparation of the following Rebuttal Testimony in question and answer form, consisting of 12 pages of Rebuttal Testimony to be presented in the above case, that the answers in the following Rebuttal Testimony were given by her; that she has knowledge of the matters set forth in such answers; and that such matters are true to the best of her knowledge and belief.

Sarah Kliethermes

Sarah Kliethermes

Subscribed and sworn to before me this 7th day of May, 2015.

SUSAN L. SUNDERMEYER
Notary Public - Notary Seal
State of Missouri
Commissioned for Callaway County
My Commission Expires: October 28, 2018
Commission Number: 14942086

Susan L. Sundermeyer

Notary Public

REBUTTAL TESTIMONY

OF

SARAH KLIETHERMES

KANSAS CITY POWER & LIGHT COMPANY

CASE NO. ER-2014-0370

Q. Are you the same Sarah Kliethermes that contributed to Staff's Report on Class Cost-of-Service and Rate Design ("CCOS Report")?

A. Yes.

Q. What is the purpose of your rebuttal testimony?

A. I respond to the production-related allocators used by Kansas City Power & Light Company ("KCPL") witness Mr. Rush, and Missouri Industrial Energy Consumers ("MIEC") and Midwest Energy Consumers' Group ("MECG") witness Mr. Brubaker. I also respond to these witnesses' discussion of energy cost and cost-causation.

Production-Related Allocators

Q. Do you agree with Mr. Brubaker that a kWh is not a kWh, as he testifies on page 9 of his direct testimony?

A. Yes. I agree with Mr. Brubaker that the cost of producing a kWh of energy will vary depending on what plant is producing that energy, and what plants are operating to produce energy at a given time. However, unlike Mr. Brubaker, I take this reality into account in developing allocators for Staff's Class Cost-of-Service Study ("CCOS"). Unlike the other submitted CCOS studies, Staff's energy–related allocations are based on an assignment of time-differentiated pricing. [1]

Q. Is a kW a kW?

A. No. As I discussed and demonstrated in the CCOS Report, base capacity is quite expensive to install and operate, while peaking capacity is relatively cheap to install and operate. The cost of intermediate capacity is somewhere between those two.

Q. Did Mr. Brubaker address the relative capacity costs of different unit types in his study?

A. No. While Mr. Brubaker did weight his capacity allocation by load factor, he effectively treats the capacity cost of a nuclear plant as equal to the capacity cost of a simple cycle gas plant. As discussed and demonstrated in the CCOS Report, these types of units have very different installed capacity costs.

Q. Do all of the filed CCOS studies treat KCPL as a vertically-integrated electric utility?

A. Yes. All of the studies, Staff's included, treat KCPL as the vertically-integrated utility that it is. However, as discussed and demonstrated in the CCOS Report, Staff's use of a detailed Base, Intermediate, and Peak (BIP) study does take a step towards recognizing the time-differentiated energy pricing that occurs when any electric utility participates in an integrated energy market While all of the other filed studies flatly allocate energy-related production costs as though all kWh had the same value, Staff's detailed BIP

[1] Staff relied on the energy characteristics of each customer class to appropriately assign (1) the relatively inexpensive fuel costs of base generation on each class' base energy usage, (2) the relatively moderate fuel costs of intermediate generation on each class' intermediate energy usage, and (3) the relatively expensive fuel costs of peaking generation on each class' peak energy usage. The fuel cost on a per MWh basis for each plant, as used in the Staff revenue requirement, is used as the price to serve each class' base, intermediate, and peak load (in MWh). The relative value – by class – of the fuel to serve the load requirements of each class is used as the Production-Energy allocator. Other common CCOS methods tend to assume that energy costs the same amount regardless of the hour of consumption or the source of the energy.

relies on an allocation developed through an assignment of energy costs to the classes considering the level of energy demanded by that class in the hour the energy was used.

Q. Is it reasonable to allocate costs between classes using the assumption that KCPL generates its own energy to serve its own load?

A. Yes. All parties calculate KCPL's net jurisdictional revenue requirement on the assumption that KCPL generates its own energy using its own resources to serve its own Missouri load. Because each party's CCOS studies are conducted to allocate that revenue requirement, it is not unreasonable to allocate costs among the classes using the assumption that KCPL generates its own energy using its own resources to serve its own Missouri load.

Cost of Energy to Serve Load

Q. Do you agree with Mr. Rush's assertion that cost-causation supports an energy charge of less than $0.02 per kWh?[2]

A. No. Mr. Rush's calculations reflect KCPL's unbundling of costs into energy-related, demand-related, and customer-related components. These unbundled costs are based on the net jurisdictional revenue requirement that KCPL should be given an opportunity to collect. The unbundled results are useful for the purposes of examining which classes are allocated what relative share of the utility's revenue requirement related to these classifications. However, these costs are not relevant to calculating the cost of energy to serve KCPL's customers, as is discussed in detail below concerning the cost-causation underlying energy charges.

Q. What costs in KCPL's revenue requirement are designated energy-related in CCOS studies?

[2] See Tim Rush Direct testimony, pages 63-64.

A. The energy-related costs contained in KCPL's revenue requirement net of off-system sales are the costs KCPL incurs to generate electricity that it sells through the SPP integrated energy market.

Q. Is the portion of KCPL's revenue requirement that has been designated as energy-related relevant for determining the cost of supplying a customer with a kWh of energy?

A. No. Because of KCPL's participation in the SPP integrated energy market, the cost to supply a customer with a kWh of energy is the cost of energy at the relevant KCPL node at the time that kWh is consumed (adjusted for transmission, ancillary services, and losses).

Q. Does Mr. Brubaker base his Large Power Service ("LPS") and Large General Service ("LGS") rate design recommendations on Mr. Rush's calculations that you discuss above?

A. Yes. Mr. Brubaker testifies that his position is premised on an assumption that "KCPL's calculated average variable costs (Schedule TMR-8) are less than 1.7¢/kWh."[3] Mr. Brubaker does not discuss the fact that this calculation relates to KCPL's cost to generate energy, not KCPL's cost to obtain energy through the SPP integrated energy market to serve its customers.

Q. Do either Mr. Brubaker or Mr. Rush acknowledge the existence of the SPP integrated energy market in either's discussion of energy cost?

A. No. Even in Mr. Brubaker's discussion of the cost of energy to serve LPS and LGS customers, Mr. Brubaker relies on Mr. Rush's calculation of KCPL's cost of generation, as opposed to KCPL's cost of energy to serve its customers.

[3] See Maurice Brubaker direct testimony, pages 30-31.

Q. Using KCPL's direct-filed market prices, how many hours of the year was the market price at or below 1.7¢/kWh?

A. Of the 8760 hours of market prices, only 15 hours were at or below 1.7¢/kWh. KCPL's lowest direct-filed price for any hour was $1.496¢/kWh.

Q. Using Staff's market prices used in its direct-filed production modeling, what are the annual and seasonal average costs of energy to serve customers by class?

A. Across all seasons and classes, the average cost of energy to serve load is $30.19 per MWh.[4] The average cost of energy for each class, at the customer meter, adjusted for class-average voltage, is provided below. These results include the average cost for a customer in a given class with a perfect load factor, as well as the average cost for customers with a class-average load factor.[5] The lowest cost of energy experienced by any class is 2.557¢/kWh, for the lighting class during the non-summer season.

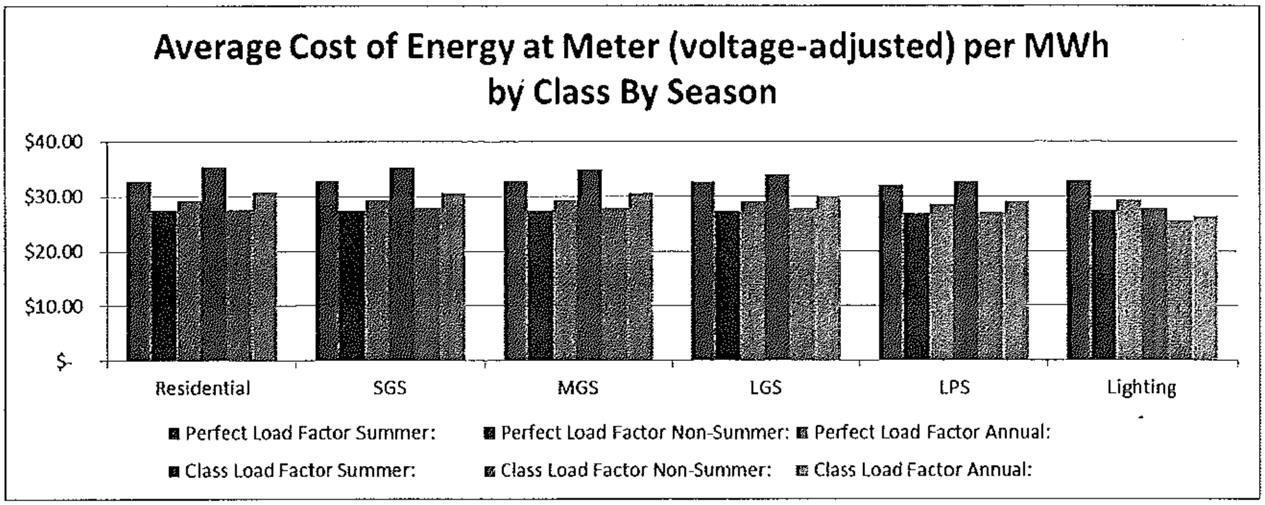
Table 1

Average Cost of Energy at Meter (voltage-adjusted) per MWh by Class By Season

	Residential	SGS	MGS	LGS	LPS	Lighting
Perfect Load Factor Summer:	$ 32.76	$ 32.76	$ 32.75	$ 32.65	$ 32.12	$ 32.76
Perfect Load Factor Non-Summer:	$ 27.43	$ 27.43	$ 27.43	$ 27.34	$ 26.90	$ 27.43
Perfect Load Factor Annual:	$ 29.23	$ 29.22	$ 29.22	$ 29.13	$ 28.66	$ 29.23
Class Load Factor Summer:	$ 35.41	$ 35.22	$ 34.80	$ 33.96	$ 32.63	$ 27.91
Class Load Factor Non-Summer:	$ 27.66	$ 28.03	$ 28.09	$ 27.82	$ 27.09	$ 25.57
Class Load Factor Annual:	$ 30.87	$ 30.70	$ 30.67	$ 29.97	$ 29.11	$ 26.25
Cost of Energy at Generation:	$ 79,793,049	$ 13,165,681	$ 35,689,686	$ 70,412,308	$ 65,105,409	$ 2,356,941

[4] The total cost of energy to serve load is $266,523,074 at generation voltage level. There are approximately 8,827,534 MWh at customer meter level. This results in an average cost of energy of $30.19/MWh across all voltage levels assuming average class load factors.

[5] This table provides results based on the class-average load factor. For example, the simple average around-the-clock annual average cost of energy is $27.58/MWh at generation, $28.50/MWh at transmission, $29.22 at primary voltage, and $29.93/MWh at secondary voltage.



Q. Considering these costs, is it reasonable to assume that the cost of energy to serve any class of customers could be at or below 1.7¢/kWh?

A. No. The cost of energy calculated by Mr. Rush and relied on by Mr. Brubaker is 44% below the cost of energy at the customer meter to serve an average load factor customer.

Q. Have you compared the cost of energy to serve customers against the cost designated as energy-related that Staff allocated to each class?

A. Yes. The results indicate that Staff's CCOS allocated less energy-related production costs to most of the classes than the cost of the energy KCPL purchases through the SPP integrated energy market to serve those classes. All together, the market price for purchased power was approximately $15 million more per year than the less energy-related production costs included in Staff's revenue requirement.

Table 2

Average (voltage-adjusted) Allocated Cost of Energy Production verus Cost of Energy to Serve Customers	Residential	SGS	MGS	LGS	LPS	Lighting
Allocated Energy-Related Costs $/MWh @ Customer Meter:	$ 29.35	$ 30.67	$ 29.74	$ 28.15	$ 26.12	$ 32.48
Class-Average Cost of Energy $/MWh @ Customer Meter:	$ 30.87	$ 30.70	$ 30.67	$ 29.97	$ 29.11	$ 26.25
Difference $/MWh:	$ 1.52	$ 0.03	$ 0.93	$ 1.82	$ 2.99	$ (6.23)
Difference:	$ 3,915,152	$ 13,056	$ 1,075,756	$ 4,254,492	$ 6,668,407	$ (557,609)
% Change to CCoS Results:	1.18%	0.02%	0.91%	2.04%	3.94%	-4.83%

Q. If a customer uses one more kWh of energy, would it impact KCPL's cost of service by KCPL's cost of generating a kWh of energy?

A. No. If a KCPL customer uses one more kWh of energy, it would increase KCPL's cost of service by the value of that energy as purchased through the SPP integrated energy market. Correspondingly, if a customer uses one fewer kWh of energy, it would reduce KCPL's cost of service by the value of that energy at market, plus some amount of transmission expense. Based on values provided in KCPL's schedule TMR-5, attached to Tim Rush's direct testimony, the cost of SPP base plan funding is just under $2/MWh on average at the customer meter. Staff has not included a value for transmission in the tables below, but it does need to be considered in determining cost-causation.

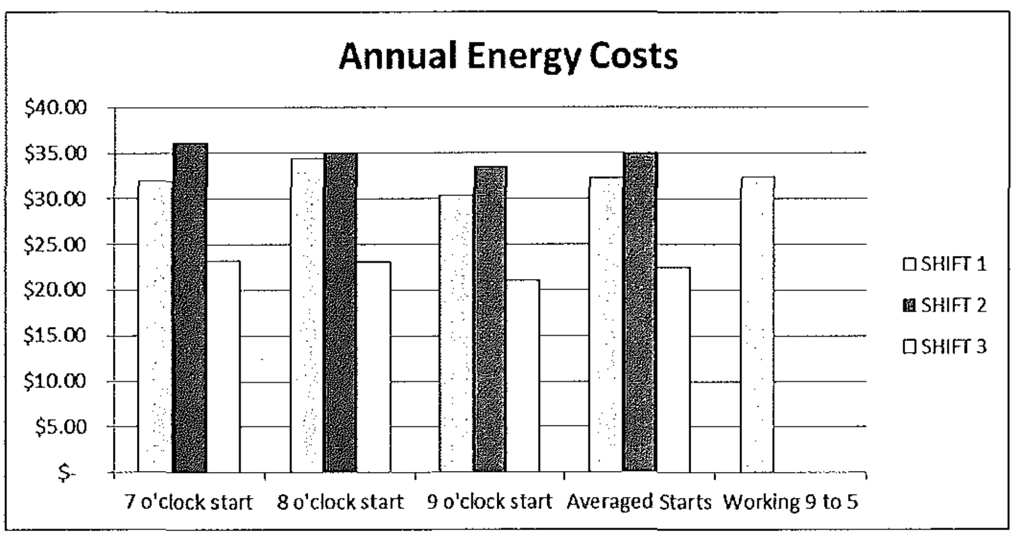
Q. Did you analyze Mr. Brubaker's claim that the hours of use rates for the LP and LG classes relate to the number of operating shifts undertaken by industrial customers in those classes?

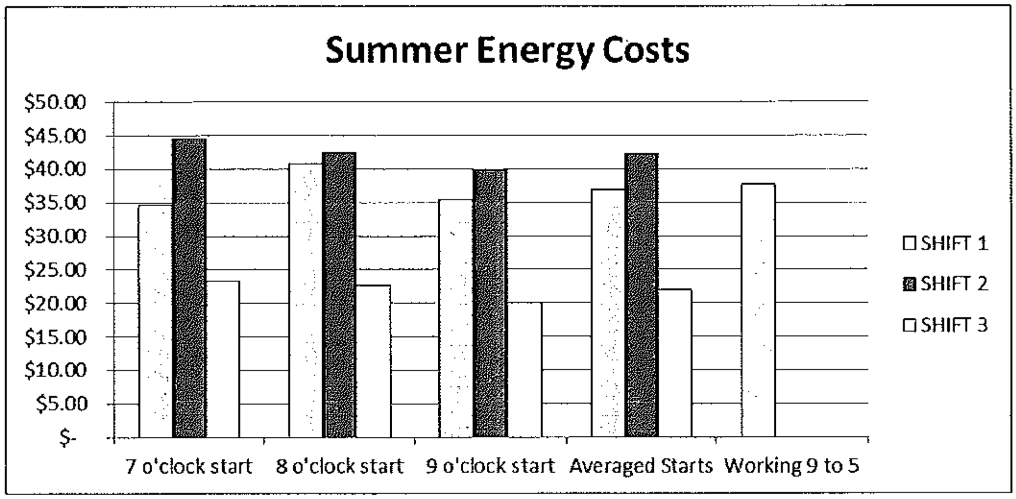
A. Yes. However, I do not agree with Mr. Brubaker's conclusion that the first shift is the most expensive shift to serve, followed by the second shift, followed by the third shift. Instead, I found that the second shift is the most expensive, followed by the first shift, followed by the third shift. I have compared these results with the average prices for "on peak," and "off peak" energy, as well as the average for prices between the times of 9:00 am to 5:00 pm. A comparison of these results is provided below for each voltage level, based on the market prices used in Staff's direct-filed production modeling run. The provided graphs are for customers served at secondary voltage.

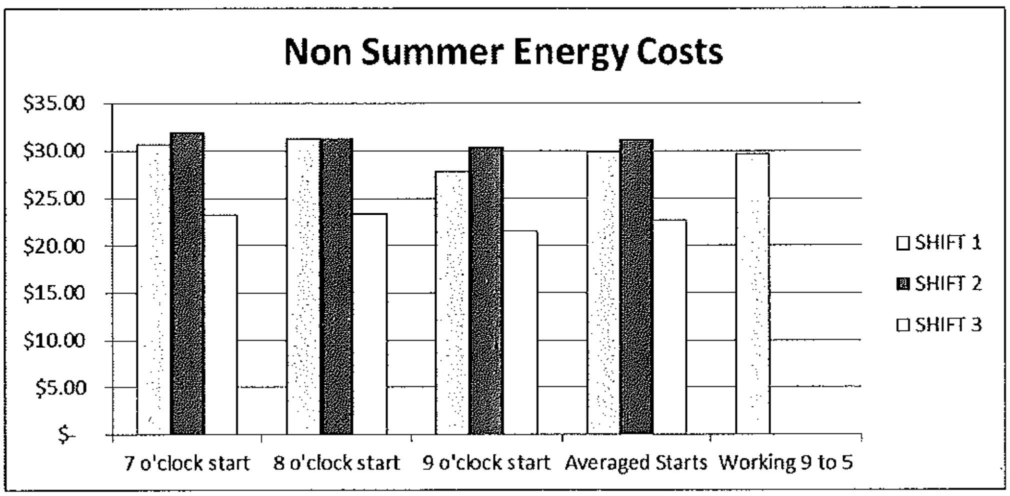
Table 3

	Secondary Voltage			Primary Voltage			Transmission		
	On PEAK	Off PEAK	Working 9 to 5	On PEAK	Off PEAK	Working 9 to 5	On PEAK	Off PEAK	Working 9 to 5
Annual	$ 34.01	$ 23.13	$ 32.34	$ 33.20	$ 22.58	$ 31.57	$ 32.38	$ 22.03	$ 30.79
Summer	$ 39.49	$ 23.51	$ 37.74	$ 38.55	$ 22.95	$ 36.84	$ 37.61	$ 22.38	$ 35.94
NonSummer	$ 31.26	$ 22.94	$ 29.64	$ 30.52	$ 22.39	$ 28.93	$ 29.77	$ 21.84	$ 28.22
	SHIFT 1	SHIFT 2	SHIFT 3	SHIFT 1	SHIFT 2	SHIFT 3	SHIFT 1	SHIFT 2	SHIFT 3
	7 o'clock start			7 o'clock start			7 o'clock start		
Annual	$ 31.94	$ 36.08	$ 23.23	$ 31.18	$ 35.22	$ 22.68	$ 30.41	$ 34.35	$ 22.12
Summer	$ 34.55	$ 44.44	$ 23.29	$ 33.73	$ 43.38	$ 22.73	$ 32.90	$ 42.31	$ 22.17
NonSummer	$ 30.63	$ 31.89	$ 23.20	$ 29.90	$ 31.13	$ 22.65	$ 29.16	$ 30.37	$ 22.09
	8 o'clock start			8 o'clock start			8 o'clock start		
Annual	$ 34.42	$ 34.96	$ 23.12	$ 33.60	$ 34.12	$ 22.57	$ 32.78	$ 33.29	$ 22.01
Summer	$ 40.78	$ 42.33	$ 22.55	$ 39.81	$ 41.32	$ 22.01	$ 38.83	$ 40.31	$ 21.47
NonSummer	$ 31.25	$ 31.27	$ 23.40	$ 30.50	$ 30.53	$ 22.84	$ 29.75	$ 29.78	$ 22.28
	9 o'clock start			9 o'clock start			9 o'clock start		
Annual	$ 30.35	$ 33.47	$ 21.01	$ 29.63	$ 32.67	$ 20.50	$ 28.90	$ 31.87	$ 20.00
Summer	$ 35.50	$ 39.75	$ 20.07	$ 34.65	$ 38.81	$ 19.60	$ 33.80	$ 37.85	$ 19.12
NonSummer	$ 27.78	$ 30.32	$ 21.47	$ 27.11	$ 29.60	$ 20.96	$ 26.45	$ 28.87	$ 20.44
	Averaged Starts			Averaged Starts			Averaged Starts		
Annual	$ 32.24	$ 34.83	$ 22.45	$ 31.47	$ 34.00	$ 21.92	$ 30.70	$ 33.17	$ 21.38
Summer	$ 36.94	$ 42.17	$ 21.97	$ 36.06	$ 41.17	$ 21.45	$ 35.18	$ 40.16	$ 20.92
NonSummer	$ 29.88	$ 31.16	$ 22.69	$ 29.17	$ 30.42	$ 22.15	$ 28.46	$ 29.67	$ 21.61

While the results will proportionately vary by voltage level, provided below are graphs of these results for customers served at secondary voltage.







Q. Was this pattern repeated using KCPL's direct-filed power prices?

A. Yes.

Q. Was this pattern repeating using the actual day-ahead prices for KCPL in the SPP for the period May 1, 2014 – April 30, 2015?

A. Yes, as shown below in the provided table:

Table 4

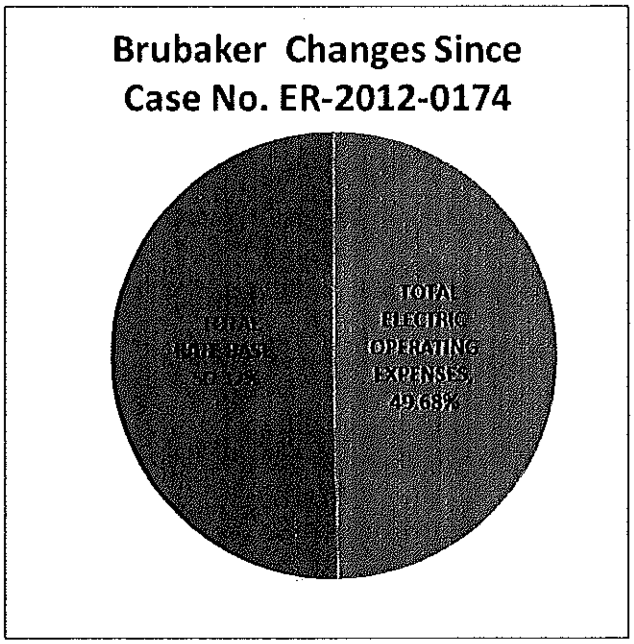
	Secondary Voltage			Primary Voltage			Transmission		
	On PEAK	Off PEAK	Working 9 to 5	On PEAK	Off PEAK	Working 9 to 5	On PEAK	Off PEAK	Working 9 to 5
Annual	$ 32.93	$ 21.93	$ 31.36	$ 32.14	$ 21.41	$ 30.61	$ 31.35	$ 20.88	$ 29.86
Summer	$ 35.77	$ 21.24	$ 32.61	$ 34.92	$ 20.73	$ 31.83	$ 34.06	$ 20.22	$ 31.05
NonSummer	$ 31.50	$ 22.30	$ 30.74	$ 30.75	$ 21.77	$ 30.00	$ 30.00	$ 21.23	$ 29.27
	SHIFT 1	SHIFT 2	SHIFT 3	SHIFT 1	SHIFT 2	SHIFT 3	SHIFT 1	SHIFT 2	SHIFT 3
	7 o'clock start			7 o'clock start			7 o'clock start		
Annual	$ 30.18	$ 35.68	$ 22.59	$ 29.46	$ 34.83	$ 22.05	$ 28.73	$ 33.97	$ 21.51
Summer	$ 28.45	$ 43.09	$ 21.59	$ 27.77	$ 42.07	$ 21.08	$ 27.09	$ 41.03	$ 20.56
NonSummer	$ 31.04	$ 31.97	$ 23.09	$ 30.30	$ 31.21	$ 22.54	$ 29.55	$ 30.44	$ 21.99
	8 o'clock start			8 o'clock start			8 o'clock start		
Annual	$ 33.54	$ 35.20	$ 21.38	$ 32.74	$ 34.36	$ 20.87	$ 31.93	$ 33.52	$ 20.36
Summer	$ 35.83	$ 41.80	$ 20.06	$ 34.97	$ 40.81	$ 19.58	$ 34.12	$ 39.81	$ 19.10
NonSummer	$ 32.39	$ 31.90	$ 22.04	$ 31.62	$ 31.14	$ 21.52	$ 30.84	$ 30.38	$ 20.99
	9 o'clock start			9 o'clock start			9 o'clock start		
Annual	$ 29.48	$ 34.00	$ 18.91	$ 28.78	$ 33.19	$ 18.46	$ 28.07	$ 32.38	$ 18.01
Summer	$ 30.42	$ 39.38	$ 17.36	$ 29.70	$ 38.44	$ 16.95	$ 28.97	$ 37.50	$ 16.53
NonSummer	$ 29.01	$ 31.31	$ 19.69	$ 28.32	$ 30.56	$ 19.22	$ 27.62	$ 29.81	$ 18.75
	Averaged Starts			Averaged Starts			Averaged Starts		
Annual	$ 31.06	$ 34.96	$ 20.96	$ 30.32	$ 34.13	$ 20.46	$ 29.58	$ 33.29	$ 19.96
Summer	$ 31.57	$ 41.43	$ 19.67	$ 30.82	$ 40.44	$ 19.20	$ 30.06	$ 39.45	$ 18.73
NonSummer	$ 30.81	$ 31.73	$ 21.61	$ 30.08	$ 30.97	$ 21.09	$ 29.34	$ 30.21	$ 20.57

Q. How does the market cost of energy relate to Mr. Brubaker's rate design proposals for the LP and LG classes?

A. Staff's response to Mr. Brubaker's proposals is discussed by Staff expert Robin Kliethermes. In general, given the uncertainty of start times, Staff recommends retaining the existing relationship between the blocks through an equal percent increase to each block, with no block to recover less per kWh than the voltage-adjusted around-the-clock average cost of energy.

Q. Have you reviewed Mr. Brubaker's position that this case is driven by capacity additions, so all or most of the increase in revenue requirement is capacity-related?

A. Yes. In the last case, Case No. ER-2014-0174, Schedule MEB-COS-4, attached to Mr. Brubaker's direct testimony provided Mr. Brubaker's CCOS study results, in the same format as his Schedule MEB-COS-4, attached to Mr. Brubaker's direct testimony filed in this case. In that case, he found "total rate base" to have a Missouri retail jurisdiction cost of service of $2,129,956,114, compared to this case where he found that amount to be $2,557,089,761. The difference between these values is $421,761,281. In Case No. ER-2014-0174, he found "total electric operating expenses" to have a Missouri retail jurisdiction cost of service of $630,705,397, compared to this case where he found that amount to be $1,052,466,678. The difference between these values is $ 427,133,647.[6] I do not consider $421,761,281 to be less significant than $427,133,647, in terms of rate case drivers. A comparison of these drivers is provided in the graph below:



Q. Have you been made aware of an error in one of the figures you provided in the CCOS Report?

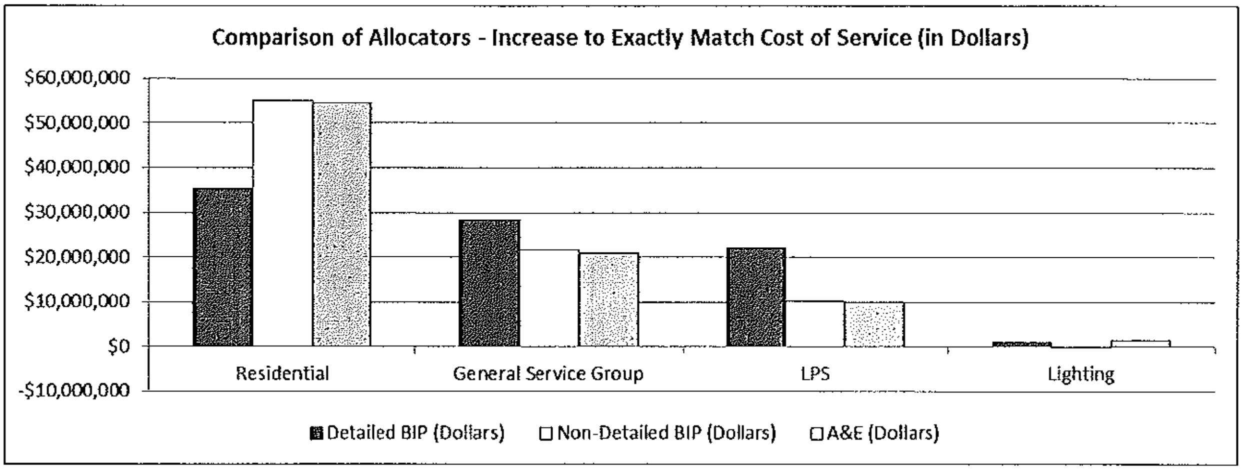
A. Yes. Table 3, on page 9, of the CCOS Report provided the results in dollars and percent of the Staff's alternative CCOS studies. While the dollar values are accurate, I inadvertently included two errors in the provided percent results for Staff's non-detailed BIP and Average and Excess ("A&E") results. Since Staff's recommended rate design is not

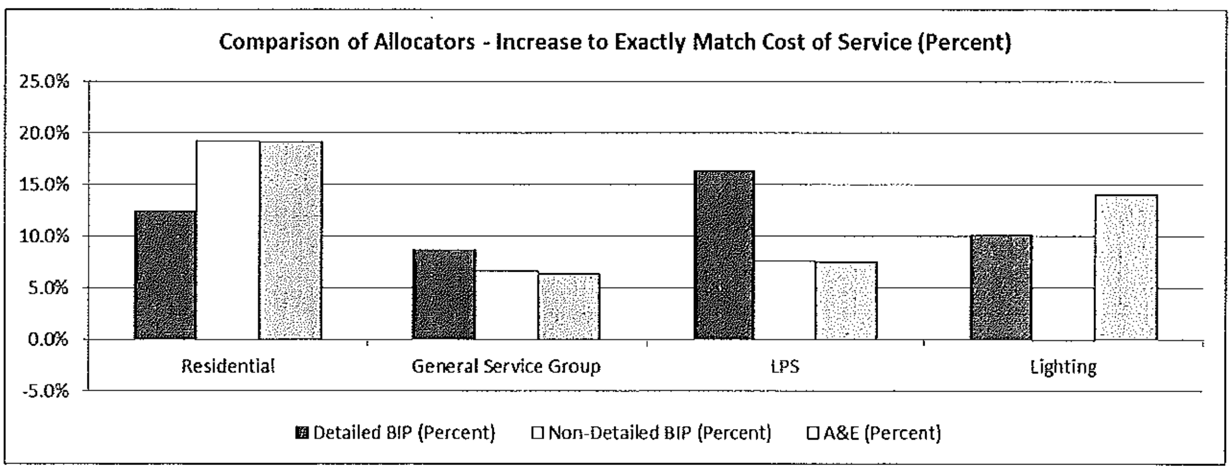
[6] Comparing Mr. Brubaker's results also indicates that total operating revenue, which includes both retail and other jurisdictional sales has increased from the last case, per his calculations.

based on these allocation methods, these corrections have no impact on Staff's recommendations. The corrected Table 3 and graphs are provided below:

Corrected Direct Table 3

Comparison of CCoS Results by Production-Related Allocator (Dollars and Percent)	Residential	General Service Group	LPS	Lighting
Detailed BIP (Dollars)	$35,417,070	$28,402,890	$22,049,532	$981,699
Detailed BIP (Percent)	12.4%	8.6%	16.4%	10.1%
Non-Detailed BIP (Dollars)	$54,951,179	$21,706,178	$10,205,133	-$11,283
Non-Detailed BIP (Percent)	19.3%	6.6%	7.6%	-0.1%
A&E (Dollars)	$54,562,826	$20,851,790	$10,074,946	$1,361,638
A&E (Percent)	19.1%	6.3%	7.5%	14.0%





Q. Does this conclude your rebuttal testimony?

A. Yes.