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

**REGULATORY REVIEW DIVISION**

**SURREBUTTAL TESTIMONY**

**OF**

**SARAH L. KLIETHERMES**

**THE EMPIRE DISTRICT ELECTRIC COMPANY**

**CASE NO. ER-2014-0351**

*Jefferson City, Missouri  
March 2015*



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**SURREBUTTAL TESTIMONY**

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**CASE NO. ER-2014-0351**

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**Executive Summary**

Q. Are you the same Sarah L. Kliethermes who contributed to Staff's Cost of Service Direct Report and Staff's Class Cost-of-Service and Rate Design Direct Report, and filed Rebuttal testimony in this matter?

A. Yes.

Q. What is the purpose of this testimony?

A. I will correct the misunderstandings of Midwest Energy Consumers Group (MECG) witness Kavita Maini, concerning the level of Praxair revenue reflected in Staff's Class Cost of Service (CCOS) study regarding treatment of credits offered to Praxair under the "Special Transmission Service Contract: Praxair, Schedule SC-P" tariff sheets. I will also generally respond to the testimonies of Ms. Maini and Empire's consultant Dr. Overcast concerning CCOS studies. Finally, I will respond to Empire's witness Scott Keith regarding the treatment of credits offered to Praxair under the "Special Transmission Service Contract: Praxair, Schedule SC-P" tariff sheets, and the interaction of Empire's existing energy efficiency portfolio with other tariff proposals in this case.

1 **Praxair revenue in Staff's CCOS**

2 Q. Is Ms. Maini correct that Staff reduced Praxair's revenue in its CCOS by the  
3 value of the credits it receives under the "Special Transmission Service Contract: Praxair,  
4 Schedule SC-P" tariff sheets?

5 A. No. For its CCOS, Staff treated Praxair as if it did not receive a credit for  
6 interruptible service.

7 Q. Is this clear from Staff's workpapers?

8 A. Yes.

9 Q. Does Ms. Maini's "correction" to remove the credit a second time from Staff's  
10 calculation result in an inappropriate double-counting?

11 A. Yes. Because Staff removes the credit from its CCOS revenues, it is  
12 inappropriate to remove it twice.

13 **Class Cost-of-Service Studies**

14 Q. Do Dr. Overcast's and Ms. Maini's criticism of Staff's Detailed BIP CCOS  
15 Study ignore the fact that Staff "stacks" generation so that baseload capacity is given a  
16 capacity value?<sup>1</sup>

17 A. Yes.

18 Q. Does designating a plant as "Base" or "Intermediate" imply that those plants  
19 will not operate at the time of system peak, or that those plants' capacity will not be relied  
20 upon to meet system peak?

21 A. Not at all. Under Staff's method, the average prices used to assign  
22 intermediate capacity costs or energy costs assumes that all Base plants have already been

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<sup>1</sup> Staff does not allocate plant as Ms. Maini describes. Staff assigns plant to develop an allocation factor that is then used to allocate all production plant.

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1 | dispatched to safe operational levels. Similarly, the average prices used to assign peak  
2 | capacity costs or energy costs assumes that all Intermediate and Base plants have already been  
3 | dispatched to safe operational levels.

4 | Q. In addition to average demand, could there be other reasonable measures for a  
5 | class's base capacity requirement?

6 | A. Yes. Staff considered use of a measure of minimum demand, but for purposes  
7 | of this case, Staff did not proceed with developing a measure of minimum demand for a  
8 | number of reasons. Staff's chief concern is that use of a minimum demand amount would not  
9 | reasonably recognize the safe ramp rates of Empire's generating fleet. For example, if  
10 | minimum demand were found to be at a level that, given Empire's wind generation, assumes  
11 | that Plum Point and the Iatan units shut off every evening and fire back up every morning and  
12 | running at full capacity by 2:00 in the afternoon, such a result is not reasonable because it is  
13 | not practical or even possible.

14 | Q. Would you expect the impact of using some measure of minimum demand for  
15 | establishing the level of base generating capacity requirements to favor high load factor  
16 | customers?

17 | A. No. The lower the measure of minimum demand used, the higher the costs  
18 | allocated to classes with high load factors. This is due to the high capacity, O&M, and fuel in  
19 | storage costs associated with the large coal plants with expensive environmental and air  
20 | quality control systems. The seeming unreasonableness of this result of over-allocating costs  
21 | to high load-factor classes is consistent with Staff's concerns related to ramp rates.

22 | Q. Does use of average demand as opposed to minimum demand render Staff's  
23 | Detailed BIP unreasonable or unreliable?

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1           A.     Not at all. Staff's use of each class's average demand to determine the Base  
2 component is reasonable, particularly in light of the limited ramp rates of the Empire  
3 generating units assigned to the Base component. Staff reasonably assumed that unless there  
4 is a required outage, the generating units assigned to the Base component will run year round.  
5 Staff further assumed that the generating units assigned to the Base component will run at  
6 some amount greater than 50% of their capacity, but less than 100% of their capacity. This  
7 assumption is also reasonable. Both assumptions are consistent with Staff's decision to use  
8 each class's average demand to determine the Base component.

9           Q.     Is there any merit to Ms. Maini's allegation that Staff's method is "punitive" to  
10 high load factor classes as she alleges at page 12 and again at page 13 of her rebuttal  
11 testimony?

12           A.     No.

13           Q.     In alleging Staff's production cost method to be punitive to high load factor  
14 classes, does Ms. Maini discuss Staff's allocation of production energy cost?

15           A.     No. Ms. Maini does not mention that Staff's method allocates less production  
16 energy costs to the GP, LP, and Praxair classes than does Ms. Maini's allocation.

17           Q.     Why is it important to consider the interrelation of production capacity and  
18 production energy costs?

19           A.     Many of the CCOS studies filed in Missouri make an effort to distinguish  
20 between the different types of capacity requirements that classes of customers put on a  
21 utility's system, however, only Staff's Detailed BIP attempts to distinguish between the  
22 different costs of energy that are derived from those different types of capacity. The demand  
23 and energy characteristics of Empire's load requirement are both important determinants of

1 production cost and expense allocations, since load must be served efficiently over time  
2 throughout the day and year. Because Empire’s generation fleet is well-suited to serving its  
3 load efficiently over the course of a year, Staff relied on unadjusted Detailed BIP allocators  
4 for allocating Empire’s production-capacity and production-energy investment and expense to  
5 the retail classes. This BIP method most reasonably recognizes that some plants will run  
6 virtually year round (Base), only part of the year (Intermediate), and rarely during the year  
7 (Peak). The BIP method also recognizes the fact that Base plants tend to be more expensive  
8 to install, but with a lower average cost of energy, while Peak plants tend to be less expensive  
9 to install, but with a high average cost of energy, and that Intermediate plants tend to be  
10 somewhere between the two.

11 Q. Does the combination of factors in Staff’s Detailed BIP method better  
12 recognize Empire’s participation in the Southwest Power Pool (SPP) Integrated Market (IM)?

13 A. Yes. While Staff’s energy and capacity assignments used in developing its  
14 production cost allocators are not as “spikey” as the day ahead (DA) Locational Marginal  
15 Price (LMP) for the Empire load node, a move towards using time-differentiated energy  
16 prices for CCOS purposes is all the more reasonable in light of Empire’s IM participation,  
17 which began in March of 2014.

18 Q. Considering separately Staff’s allocation of return on rate bases versus non-  
19 ratebase costs, is Staff’s CCOS indicative of a reasonable, non-punitive, allocation of total  
20 company revenue requirement among the customer classes?

21 A. Yes. As indicated by the following table, Staff’s allocation results in a  
22 reasonable relationship among the different types of costs allocated to the various customer  
23 classes (at generation).



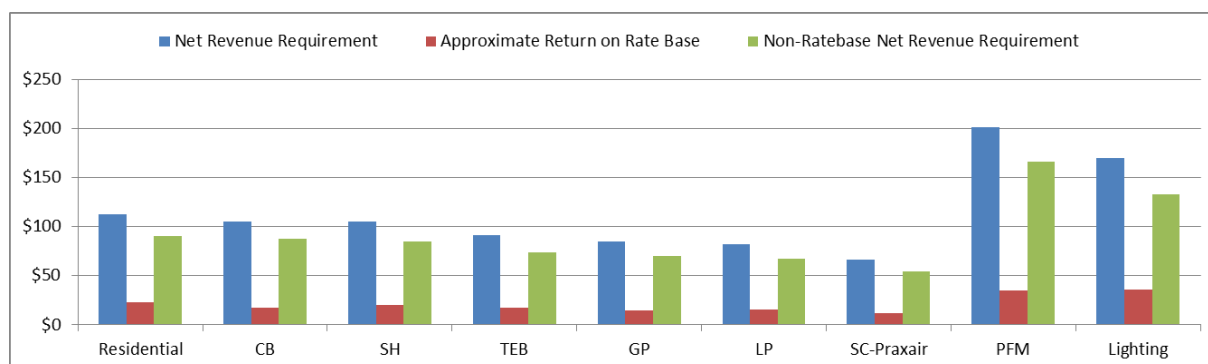
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Total Values	Residential	CB	SH	TEB	GP	LP	SC-Praxair	PFM	Lighting
Net Revenue Requirement	\$227,804,840	\$43,397,173	\$10,548,607	\$36,483,639	\$80,846,956	\$55,884,552	\$3,957,068	\$73,956	\$6,545,878
Approximate Return on Rate Base	\$45,677,175	\$7,346,495	\$2,029,716	\$7,073,539	\$14,283,447	\$10,563,463	\$723,630	\$12,787	\$1,394,661
Non-Ratebase Net Revenue Requirement	\$182,127,665	\$36,050,678	\$8,518,891	\$29,410,100	\$66,563,509	\$45,321,089	\$3,233,438	\$61,169	\$5,151,217

Q. On a per MWh basis, is Staff’s CCOS indicative of a reasonable, non-punitive, allocation of total company revenue requirement among the customer classes?

A. Yes. As indicated by the following table and graph, Staff’s allocation results in a reasonable relationship among the different types of costs allocated to the various customer classes (at generation).

\$/MWh	Residential	CB	SH	TEB	GP	LP	SC-Praxair	PFM	Lighting
Net Revenue Requirement	\$112.84	\$105.50	\$105.59	\$91.71	\$84.67	\$82.56	\$66.83	\$201.21	\$169.52
Approximate Return on Rate Base	\$22.62	\$17.86	\$20.32	\$17.78	\$14.96	\$15.61	\$12.22	\$34.79	\$36.12
Non-Ratebase Net Revenue Requirement	\$90.21	\$87.64	\$85.27	\$73.93	\$69.72	\$66.95	\$54.61	\$166.42	\$133.41



Q. Are the non-ratebase net revenue requirement values presented above net of the proceeds of Empire’s participation in the SPP IM?

A. Yes.

Q. Do you agree with Mr. Overcast’s contention at page 14 of his rebuttal that economically efficient price signals should be based on marginal cost not average revenue requirements?

1           A.     Generally.  However, I would note that the simple average day ahead (DA)  
2     Locational Marginal Price (LMP) for the Empire load node for the first year of the SPP IM,  
3     ending March 1, 2015, was \$34.34/MWh,<sup>2</sup> while the average net energy cost reflected in the  
4     non-ratebase net revenue requirement values above was significantly lower.

5           Q.     Have you applied the actual market prices for the first year of SPP IM  
6     operation to Empire’s normalized retail class load shapes?

7           A.     Yes.  This results in weighted average energy costs, on a \$/MWh basis, as  
8     follows:

	<u>Lighting</u>	<u>PRAXAIR</u>	<u>PFM</u>	<u>LP</u>	<u>GP</u>	<u>CB</u>	<u>TEB</u>	<u>SH</u>	<u>RG</u>
Energy Weighted \$/MWh:	\$ 31.21	\$ 34.11	\$ 36.53	\$ 35.06	\$ 35.50	\$ 35.93	\$ 35.65	\$ 35.65	\$ 35.61

9  
10          Q.     Do these results indicate that Staff’s Detailed BIP method, which relies on  
11     differentiated energy costs, send more reasonable cost causation signals than those CCOS  
12     methods that rely on a simple energy price?

13          A.     Yes.  Of the studies presented in this case, Staff’s method results in the most  
14     reasonable alignment of regulatory cost-causation principles and the reality of Empire’s  
15     operation in the SPP IM.

16     **Response to Mr. Keith**

17          Q.     Has Empire ever characterized the credits offered to Praxair under the “Special  
18     Transmission Service Contract: Praxair, Schedule SC-P” tariff sheets as a demand-side  
19     management program or an energy efficiency program?

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<sup>2</sup> To adjust this simple average for comparison of marginal energy cost to the average net energy cost reflected in retail rates, this amount needs to be adjusted for several items.  Those adjustments are:

1.     Weighting the average to the retail class load shape.  This would increase the magnitude for all non-lighting classes.
2.     Incorporating adders for transmission, regulation service, ramping service, etc..  This would increase the magnitude for all classes.
3.     Scaling the value to the proper voltage levels.  This would increase the magnitude for all classes.

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1           A.     No. Mr. Keith’s claim that Staff’s position is “an insurmountable impediment  
2 to the implementation or continuation of this particular Empire demand-side management  
3 program,” creating an additional hurdle to “the implementation of energy efficiency or  
4 demand-side management programs” is unsupported.

5           Q.     Is Mr. Keith correct that the credits offered to Praxair under the “Special  
6 Transmission Service Contract: Praxair, Schedule SC-P” tariff sheets have been included in  
7 the revenues in prior Empire cases?

8           A.     Not from Staff’s position, and not as supported by any record evidence. The  
9 revenues in Empire rate cases dating back through at least ER-2004-0570 have been resolved  
10 in “black box” stipulations. As discussed in my Rebuttal testimony, Staff’s filed positions in  
11 those cases have been to impute the credit back to Empire, consistent with treatment of  
12 special contracts.

13          Q.     Did Empire respond to the Department of Energy’s proposal to require  
14 participation in Empire’s energy efficiency programs as a condition of participation in certain  
15 other Empire tariffed programs?

16          A.     No. However, Mr. Keith did testify to renew Empire’s request to discontinue  
17 its existing energy efficiency programs. If those programs are discontinued and Empire does  
18 not institute energy efficiency programs under the Missouri Energy Efficiency Investment  
19 Act, Empire will not have any programs available to satisfy the Department of Energy’s  
20 proposed requirement. This result is consistent with Staff’s expectations because Staff does  
21 not support the Department of Energy’s proposal to require participation in Empire’s energy  
22 efficiency programs as a condition of participation in certain other Empire tariffed programs.

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1 | Q. Does this conclude your surrebuttal testimony?

2 | A. Yes.