COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In Re the Matter of:

APPLICATION OF LOUISVILLE GAS	)	
AND ELECTRIC COMPANY FOR AN	)	
ADJUSTMENT OF ITS ELECTRIC AND	)	CASE NO. 2016-00371
GAS RATES AND FOR CERTIFICATES	)	
OF PUBLIC CONVENIENCE AND	)	
NECESSITY	)	

SUPPLEMENTAL TESTIMONY

OF

GLENN A. WATKINS

ON BEHALF OF THE

OFFICE OF THE ATTORNEY GENERAL

APRIL 14, 2017

| 1 | Q. | **PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.** |

1 Q. **PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is Glenn A. Watkins. My business address is 1503 Santa Rosa Road,

3 Suite 130, Richmond, Virginia 23229.

4

5 Q. **HAVE YOU PREVIOUSLY PRE-FILED DIRECT TESTIMONY IN THIS**

6 **DOCKET?**

7 A. Yes. I pre-filed direct testimony on behalf of the Office of the Attorney General

8 on March 3, 2017.

9

10 Q. **WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL TESTIMONY?**

11 A. The purpose of this testimony is to supplement and update my March 3, 2017

12 testimony resulting from errors discovered in the Company's forecasted class loads. As a

13 result of these errors, Company witness Seeyle provided updated and corrected class

14 hourly loads as well as revised class cost of service studies ("CCOSS") utilizing his

15 Modified Base-Intermediate-Peak method ("BIP") and his Loss of Load Probability

16 method ("LOLP"). Because my cost studies rely upon the Company's forecasted loads,

17 an update to my recommended CCOSS is warranted. As a result, I will present the

18 results of my updated CCOSS based on these corrected forecasted class loads and opine

19 as to whether these updates change any of my original recommendations as it relates to

20 class revenue distribution.

21

22 Q. **PLEASE PROVIDE A BRIEF SUMMARY OF THE EVENTS LEADING TO THE**

23 **DISCOVERY OF ERRORS IN THE COMPANY'S FORECASTED HOURLY**

24 **LOADS.**

25 A. In his direct testimony, KIUC witness Baron observed numerous anomalies

26 within the Company's original forecasted class hourly loads. As a result, the Company

27 then discovered a mathematical error in the computation of class hourly loads and

28 provided corrected Forecasted Test Year class hourly loads. In this regard, the Company

29 indicates that the forecasted total system loads are correct, however, the distribution of

30 these system loads across classes contained a mathematical error such that certain class'

31 loads were overstated for certain hours and other class' understated for certain hours.

1   Because the allocation of costs (rate base and expenses) are performed on a relative basis,
2   the Company's corrections necessitated Mr. Seeyle rerunning his Modified BIP and
3   LOLP cost of service studies utilizing updated and corrected class hourly loads.
4   Similarly, these revised forecasts impact my analyses in which I utilized the true BIP
5   method as well as the Probability of Dispatch method to allocate generation-related costs.

6

7   **Q.   AS A RESULT OF THE QUESTIONS AND ERRORS DISCOVERED BY MR.**
8   **BARON AS IT RELATES TO THE COMPANY'S ORIGINAL FORECAST, DID**
9   **YOU CONDUCT OTHER ANALYSES BEYOND AN UPDATE USING THE**
10   **COMPANY'S CORRECTED FORECASTED HOURLY LOADS?**

11   A.   Yes. I also conducted studies using both the true BIP method and Probability of
12   Dispatch method wherein actual historical class loads were used within my CCOSS. In
13   this regard, it should be understood that my analyses utilizing historic data only relates to
14   the development of class demand allocators such that I have continued to utilize the
15   Company's forecasted energy sales by rate class as well as the Company's forecasted
16   hourly generation output by unit.[1]   It is acknowledged that my analyses utilizing
17   historical class loads presents a mismatch between the demand-side (class loads) and
18   supply-side (generation unit output). However, it is the relative amounts across classes
19   that are most relevant.   In order to maintain a comparable CCOSS utilizing the
20   Company's Forecasted Test Year rate base and expense amounts, my analyses utilizing
21   historic class load data provides a check on the reasonableness or sensitivity of my
22   CCOSS results compared to the two forecasts (original forecast and corrected forecast).

23

24   **Q.   FROM A CONCEPTUAL AND PRACTICAL PERSPECTIVE, ARE THERE**
25   **REALISTIC SHORTCOMINGS AS IT RELATES TO ANY FORECAST THAT**
26   **ATTEMPTS TO PROJECT HOURLY LOADS FOR EACH CLASS AS WELL AS**
27   **PROJECT HOURLY OUTPUT FROM THE COMPANY'S PORTFOLIO OF**
28   **GENERATING ASSETS?**

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[1]   The Company has indicated that there are no errors relating to the forecasted supply-side of generation.
That is, the Company indicated that the forecasted total system loads remain the same and that its forecasts by
individual generating unit (by hour) are unaffected by the correction.

1   A.   Absolutely. The Company's LOLP analyses as well as my Probability of

2   Dispatch analyses have been conducted utilizing forecasted loads for every class for

3   8,760 hours. In addition, the LOLP and Probability of Dispatch methods have also

4   required the use of forecasted generation outputs (KW) for every generating unit for each

5   of the 8,760 hours of the year. Because KU's and LG&E's generation facilities are

6   jointly dispatched, this required forecasts of at least 210,240 class loads (24 classes x

7   8,760 hours). In addition, the Companies have at least 38 separate jointly-used

8   generation facilities such that another 332,880 forecasts are required for the supply-side

9   (38 units x 8,760 hours). As competent, sophisticated, or complex as any forecaster may

10   be, it is virtually impossible to attempt to claim that more than 500,000 individual

11   forecasts can be reasonable or even fully evaluated. This is not to say that the use of

12   hourly loads (demand-side) and hourly output (supply-side) should not be used, or are

13   unreliable, but rather, actual experience (adjusted as appropriate) is likely a much better

14   measure of understanding the relationship between the causation of supply-side costs and

15   the demands placed upon those resources.

16

17   **Q.   PLEASE PROVIDE THE RESULTS OF YOUR UPDATED ANALYSES**

18   **UTILIZING YOUR RECOMMENDED PROBABILITY OF DISPATCH**

19   **METHOD TO ASSIGN PRODUCTION-RELATED COSTS.**

20   A.   The following table provides a summary of class rates of return at current rates

21   utilizing the Probability of Dispatch method wherein Mr. Seeyle's classification of

22   distribution plant is maintained:

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LOUISVILLE GAS & ELECTRIC Probability of Dispatch Distribution Customer/Demand Split			
	OAG As-Filed		
Class	Original Forecast	Updated Forecast	Historical Data
Residential	3.13%	3.11%	3.17%
General Service	8.27%	8.22%	8.57%
Pwr. Svc. - Pri	5.57%	5.60%	5.69%
Pwr. Svc. - Sec	8.41%	8.42%	8.12%
TOD-Pri	3.75%	3.78%	3.62%
TOD-Sec	9.43%	9.46%	9.28%
Retail Transmission	2.75%	2.80%	2.84%
Special Contract #1	1.59%	1.65%	0.62%
Special Contract #2	1.04%	1.09%	1.05%
Street Lighting	4.65%	4.65%	4.58%
Street Lighting Energy	2.77%	2.78%	2.48%
Traffic Lighting	5.18%	5.61%	5.32%
Total Company	4.92%	4.92%	4.92%

In my direct testimony, I also utilized the Probability of Dispatch method to allocate production-related costs wherein primary distribution plant is classified as 100% demand-related. The following table provides a summary of class rates of return at current rates utilizing the Probability of Dispatch method wherein primary distribution plant is classified as 100% demand-related:

LOUISVILLE GAS & ELECTRIC			
Probability of Dispatch			
Primary Distribution 100% Demand			
OAG As-Filed			
	Original	Updated	Historical
Class	Forecast	Forecast	Data
Residential	4.05%	4.04%	4.11%
General Service	7.88%	7.82%	8.17%
Pwr. Svc. - Pri	4.23%	4.26%	4.33%
Pwr. Svc. - Sec	6.87%	6.88%	6.64%
TOD-Pri	2.62%	2.65%	2.51%
TOD-Sec	7.78%	7.81%	7.65%
Retail Transmission	2.75%	2.80%	2.84%
Special Contract #1	0.65%	0.71%	-0.11%
Special Contract #2	0.18%	0.22%	0.18%
Street Lighting	5.14%	5.14%	5.07%
Street Lighting Energy	1.88%	1.89%	1.63%
Traffic Lighting	5.83%	6.30%	5.99%
Total Company	4.92%	4.92%	4.92%

As indicated in the two tables above, while class rates of return changed marginally across the various class load profile scenarios, the changes are minimal at best such that the direction and relativities remain essentially the same under all three scenarios. As a result, the Company's correction to its original forecast had little impact on CCOSS results utilizing the Probability of Dispatch method and is confirmed with the use of actual historical data.

Q. PLEASE PROVIDE THE RESULTS OF YOUR UPDATED ANALYSES UTILIZING YOUR RECOMMENDED TRUE BIP METHOD TO ASSIGN PRODUCTION-RELATED COSTS.

A.   The following table provides a summary of class rates of return at current rates utilizing the true BIP method wherein Mr. Seeyle's classification of distribution plant is maintained:

	LOUISVILLE GAS & ELECTRIC Base-Intermediate-Peak Distribution Customer/Demand Split		
	OAG As-Filed		
Class	Original Forecast	Updated Forecast	Historical Data
Residential	3.06%	2.78%	2.92%
General Service	7.99%	8.32%	8.02%
Pwr. Svc. - Pri	5.42%	5.58%	5.35%
Pwr. Svc. - Sec	8.21%	8.53%	8.39%
TOD-Pri	3.58%	3.82%	3.73%
TOD-Sec	12.39%	13.46%	12.74%
Retail Transmission	2.45%	2.70%	2.84%
Special Contract #1	1.41%	1.67%	1.38%
Special Contract #2	1.33%	1.39%	1.46%
Street Lighting	4.66%	4.66%	4.66%
Street Lighting Energy	2.66%	2.66%	2.66%
Traffic Lighting	5.70%	5.69%	5.68%
Total Company	4.92%	4.92%	4.92%

In my direct testimony, I also utilized the true BIP method to allocate production-related costs wherein primary distribution plant is classified as 100% demand-related. The following table provides a summary of class rates of return at current rates utilizing the true BIP method wherein primary distribution plant is classified as 100% demand-related:

LOUISVILLE GAS & ELECTRIC
Base-Intermediate-Peak
Primary Distribution 100% Demand

| | OAG As-Filed | | |
| | Original | Updated | Historical |
Class	Forecast	Forecast	Data
Residential	3.97%	3.64%	3.80%
General Service	7.61%	7.93%	7.64%
Pwr. Svc. - Pri	4.10%	4.23%	4.04%
Pwr. Svc. - Sec	6.72%	6.98%	6.83%
TOD-Pri	2.46%	2.66%	2.59%
TOD-Sec	10.11%	10.96%	10.39%
Retail Transmission	2.45%	2.70%	2.84%
Special Contract #1	0.50%	0.71%	0.47%
Special Contract #2	0.40%	0.46%	0.51%
Street Lighting	5.16%	5.16%	5.16%
Street Lighting Energy	1.70%	1.70%	1.70%
Traffic Lighting	6.43%	6.41%	6.40%
Total Company	4.92%	4.92%	4.92%

As indicated in the two tables above, while class rates of return again changed marginally across the various class load profile scenarios, the changes are also minimal at best such that the direction and relativities remain essentially the same under all three scenarios. As a result, the Company's correction to its original forecast had little impact on CCOSS results utilizing the true BIP method and is confirmed with the use of actual historical data.

Q.   ARE YOU PROVIDING THE DETAILS SUPPORTING YOUR UPDATED CCOSS RESULTS WITH THIS SUPPLEMENTAL TESTIMONY?

A.   No.   Eight separate CCOSS were conducted as part of this supplemental testimony. Due to the magnitude and size of the data and computerized spreadsheets required to conduct these additional eight studies, I am not providing the details of each study with this testimony. However, all details and supporting files will be provided to any party expeditiously upon request.

1 **Q.   BASED ON THE RESULTS OF YOUR UPDATED AND SUPPLEMENTAL**
2 **ANALYSES, DO YOU HAVE ANY CHANGES TO THE RECOMMENDATIONS**
3 **MADE IN YOUR PRE-FILED DIRECT TESTIMONY DATED MARCH 3, 2017?**

4 A.   No. As discussed above, the various analyses that I conducted concerning the
5 correction of the Company's original forecasted class hourly loads as well as the
6 utilization of actual historic class load data, has virtually no impact on class rates of
7 return. As discussed at length in my direct testimony, CCOSS results should serve only
8 as a guide and is one of many tools that should be considered in establishing class
9 revenue responsibility. Given the immaterial differences in the CCOSS results contained
10 in this supplemental testimony, the recommendations contained in my pre-filed direct
11 testimony dated March 3, 2017 remain unchanged.

12

13 **Q.   SO THAT IT IS CLEAR, DO YOUR UPDATED AND SUPPLEMENTAL**
14 **ANALYSES IMPACT YOUR CUSTOMER COST ANALYSES OR YOUR**
15 **RESIDENTIAL CUSTOMER CHARGE RECOMMENDATIONS?**

16 A.   No. These updates and supplemental analyses relate only to the allocation of
17 generation-related costs. Customer costs relate only to the distribution function and
18 therefore, there is no impact on my customer cost analyses or my recommended
19 residential customer charge.

20

21 **Q.   DOES THIS COMPLETE YOUR SUPPLEMENTAL TESTIMONY?**
22 A.   Yes.

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In the Matters of:

ELECTRONIC APPLICATION OF LOUISVILLE GAS   )
ELECTRIC COMPANY FOR AN ADJUSTMENT   )   CASE NO.
OF ITS ELECTRIC AND GAS RATES AND FOR   )   2016-00371
CERTIFICATES OF PUBLIC CONVENIENCE AND   )
NECESSITY   )

AFFIDAVIT OF Glenn Watkins

Commonwealth of Virginia   )
)

       Glenn Watkins, being first duly sworn, states the following:
The prepared Supplemental Testimony attached thereto constitute the
supplemental direct testimony of Affiant in the above-styled case. Affiant states
that he would give the answers set forth in the Supplemental Testimony if asked
the questions propounded therein. Affiant further states that, to the best of his
knowledge, his statements made are true and correct. Further affiant saith not.

_____
Glenn Watkins

SUBSCRIBED AND SWORN to before me this 13ᵗʰ day of April , 2017.

_____
NOTARY PUBLIC

My Commission Expires: 10 31 2018