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April 23, 2015

Mr. Jeff D. Cline  
Public Service Commission of Kentucky  
P.O. Box 615  
211 Sower Boulevard  
Frankfort, KY 40602-0615

RECEIVED

APR 24 2015

PUBLIC SERVICE  
COMMISSION

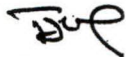
Re: Big Rivers Electric Corporation  
Administrative Case No. 387

Dear Mr. Cline:

Enclosed for filing on behalf of Big Rivers Electric Corporation are two copies of its supplement to its annual Finance and Statistical Report (Annual Report) required by the Public Service Commission's Order dated October 7, 2005, in Administrative Case 387. Additionally, an original and ten copies of a petition for confidential protection are enclosed.

Please feel free to contact me with any questions.

Sincerely,



Tyson Kamuf  
TAK/bh  
Enclosures

cc: Lindsay Barron  
DeAnna Speed  
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Your Touchstone Energy® Cooperative 

**COMMONWEALTH OF KENTUCKY**

**BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY**

**In the Matters of:**

**A REVIEW OF THE ADEQUACY OF  
KENTUCKY'S GENERATION CAPACITY  
AND TRANSMISSION SYSTEM**

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**Administrative Case  
No. 387**

**REQUEST OF  
BIG RIVERS ELECTRIC CORPORATION  
FOR AN EXTENSION TO FILE THE  
ANNUAL INFORMATION REQUIRED BY  
AN ORDER IN  
ADMINISTRATIVE CASE NO. 387**

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**Case No.  
2015-00035**

**SUPPLEMENTAL INFORMATION PROVIDED WITH  
BIG RIVERS' ANNUAL FINANCIAL AND STATISTICAL REPORT  
PURSUANT TO ADMINISTRATIVE CASE NO. 387**

**FILED: April 24, 2015**

**BIG RIVERS ELECTRIC CORPORATION**

**SUPPLEMENTAL INFORMATION PROVIDED WITH  
BIG RIVERS' ANNUAL FINANCIAL AND STATISTICAL REPORT  
PURSUANT TO ADMINISTRATIVE CASE NO. 387 –  
A REVIEW OF THE ADEQUACY OF KENTUCKY'S GENERATION  
CAPACITY AND TRANSMISSION SYSTEM**

**Response to Commission Staff's Information Request  
as set forth in  
Appendix G of the Commission's Order dated December 20, 2001**

**April 24, 2015**

1 **Item 1)** *Actual and weather-normalized energy sales for the just*  
2 *completed calendar year. Sales should be disaggregated into native load*  
3 *sales and off-system sales. Off-system sales should be further*  
4 *disaggregated into full requirements sales, firm capacity sales, and non-*  
5 *firm or economy energy sales. Off-system sales should be further*  
6 *disaggregated to identify separately all sales where the utility acts as a*  
7 *reseller, or transporter, in a power transaction between two or more other*  
8 *parties.*

9  
10 **Response)** The information originally requested in the above item of Appendix G  
11 of the Commission's Order dated December 20, 2001, in Administrative Case No.  
12 387, ("the December 2001 Order in Admin. Case 387") is no longer required  
13 pursuant to Ordering Paragraph No. 5 of the Commission's Order dated March 29,  
14 2004, amending the December 2001 Order in Admin Case 387.

15

16

17 **Respondent)** Marlene S. Parsley

18



**BIG RIVERS ELECTRIC CORPORATION**

**SUPPLEMENTAL INFORMATION PROVIDED WITH  
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PURSUANT TO ADMINISTRATIVE CASE NO. 387 –  
A REVIEW OF THE ADEQUACY OF KENTUCKY'S GENERATION  
CAPACITY AND TRANSMISSION SYSTEM**

**Response to Commission Staff's Information Request  
as set forth in  
Appendix G of the Commission's Order dated December 20, 2001**

**April 24, 2015**

1 **Item 2)** *A summary of monthly power purchases for the just completed*  
2 *calendar year. Purchases should be disaggregated into firm capacity*  
3 *purchases required to serve native load, economy energy purchases, and*  
4 *purchases where the utility acts as a reseller, or transporter, in a power*  
5 *transaction between two or more other parties.*

6

7 **Response)** The information originally requested in the above item of Appendix G  
8 of the December 2001 Order in Admin. Case 387 is no longer required pursuant to  
9 Ordering Paragraph No. 5 of the Commission's Order dated March 29, 2004,  
10 amending the December 2001 Order in Admin Case 387.

11

12

13 **Respondent)** Marlene S. Parsley

14



**BIG RIVERS ELECTRIC CORPORATION**  
**SUPPLEMENTAL INFORMATION PROVIDED WITH**  
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**PURSUANT TO ADMINISTRATIVE CASE NO. 387 –**  
**A REVIEW OF THE ADEQUACY OF KENTUCKY'S GENERATION**  
**CAPACITY AND TRANSMISSION SYSTEM**

**Response to Commission Staff's Information Request**  
**as set forth in**  
**Appendix G of the Commission's Order dated December 20, 2001**

**April 24, 2015**

1 **Item 3)** *Actual and weather-normalized monthly coincident peak*  
2 *demands for the just completed calendar year. Demands should be*  
3 *disaggregated into*

4  
5 *a. native load demand (firm and non-firm) and*  
6 *b. off-system demand (firm and non-firm).*

7  
8 **Response)** Table 3-G shows the actual and weather normalized native load  
9 demand and the off-system coincident demand for 2014. Big Rivers sells its power  
10 into the Midcontinent Independent System Operator, Inc. ("MISO") market and  
11 therefore the off-system sales cannot be weather normalized. Off-system demand  
12 is comprised of two components: forward bilateral sales which are characterized  
13 as firm, and off-system sales due to generation clearing in the MISO market  
14 which is in excess of Big Rivers' load. These sales are not "non-firm," rather are a  
15 result of Big Rivers' compliance with MISO tariff obligations.

16

17

18 **Respondent)** Marlene S. Parsley

19

**Big Rivers Electric Corporation  
Administrative Case No. 387  
Case No. 2015-00035**

**Table 3-G  
Native Peak and Off-System Sales  
Weather Normalized**

**Total Native Load and Off-System Coincident Peak Demands\* (MW)**

Month	Peak Date	Native Load		Off-System Sales		
		All Firm Peak Demand		Off-System Demand		
		Actual	Weather Normalized	Firm	Sales to MISO**	Non-Firm
Jan-14	01/06/14	741	649	50	0	0
Feb-14	02/11/14	675	571	200	158	0
Mar-14	03/03/14	579	477	200	242	0
Apr-14	04/16/14	456	443	200	317	0
May-14	05/31/14	498	514	0	165	0
Jun-14	06/18/14	578	564	0	0	0
Jul-14	07/22/14	597	700	250	336	0
Aug-14	08/27/14	606	626	250	336	0
Sep-14	09/05/14	571	538	200	432	0
Oct-14	10/02/14	474	444	200	318	0
Nov-14	11/18/14	574	448	250	380	0
Dec-14	12/12/14	536	614	200	464	0

\* Peak Demands with Losses and without Smelter loads

\*\*Sales to MISO at generator nodes

**BIG RIVERS ELECTRIC CORPORATION**

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A REVIEW OF THE ADEQUACY OF KENTUCKY'S GENERATION  
CAPACITY AND TRANSMISSION SYSTEM**

**Response to Commission Staff's Information Request  
as set forth in  
Appendix G of the Commission's Order dated December 20, 2001**

**April 24, 2015**

1 **Item 4)** *Load shape curves that show actual peak demands and*  
2 *weather-normalized peak demands (native load demand and total*  
3 *demand) on a monthly basis for the just completed calendar year.*

4

5 **Response)** Graph 4-G shows the monthly native load demand with the monthly  
6 weather normalized native load demand for 2014.

7

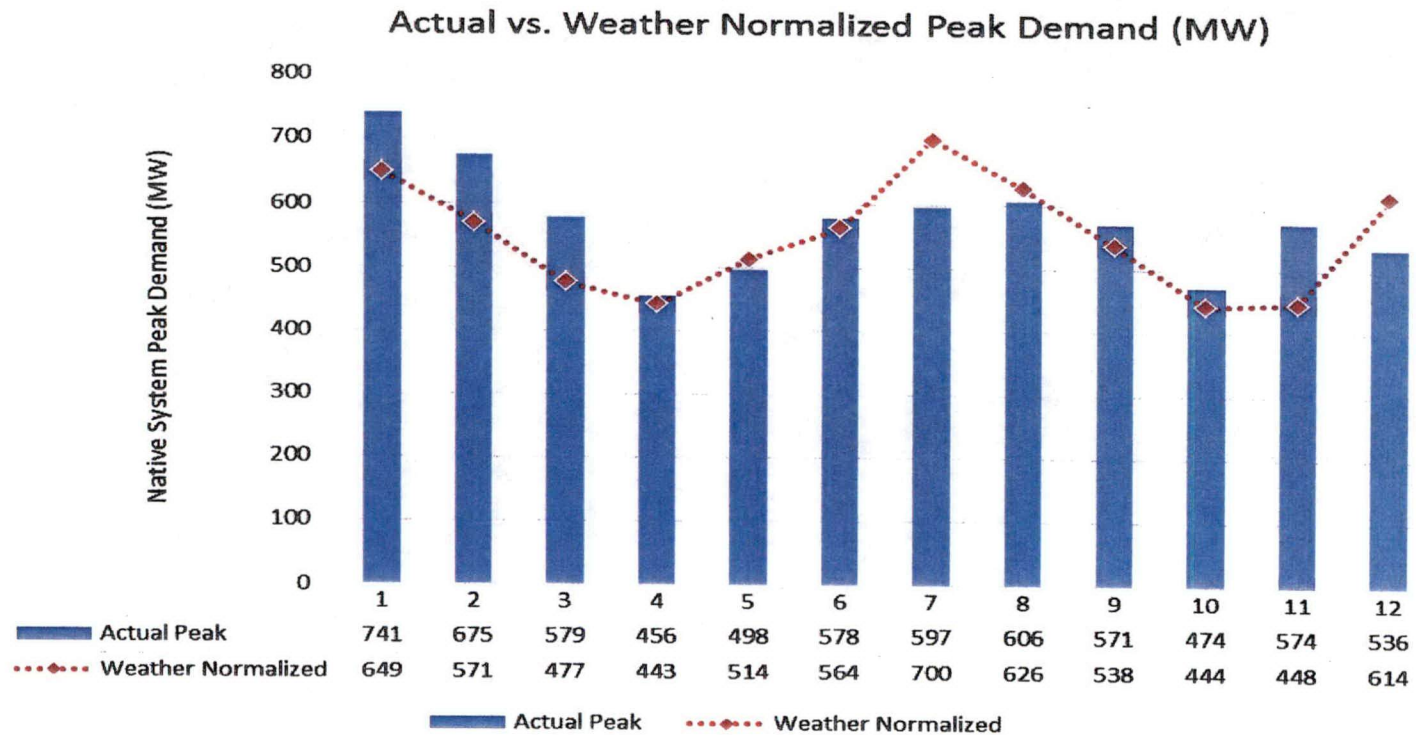
8

9 **Respondent)** Marlene S. Parsley

10



**Big Rivers Electric Corporation**  
**Administrative Case No. 387**  
**Case No. 2015-00035**  
**Graph 4-G**  
**Actual versus Weather Normalized Peak Demand**



**BIG RIVERS ELECTRIC CORPORATION**

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**Response to Commission Staff's Information Request  
as set forth in  
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**April 24, 2015**

1 **Item 5)** *Load shape curves showing the number of hours that native*  
2 *load demand exceeded these levels during the just complete calendar year:*

3  
4 *a. 70% of the sum of installed generating capacity plus firm*  
5 *capacity purchases;*

6 *b. 80% of the sum of installed generating capacity plus firm*  
7 *capacity purchases;*

8 *c. 90% of the sum of installed generating capacity plus firm*  
9 *capacity purchases.*

10  
11 **Response)** The information originally requested in the above item of Appendix G  
12 of the December 2001 Order in Admin. Case 387 is no longer required pursuant to  
13 Ordering Paragraph No. 5 of the Commission's Order dated March 29, 2004,  
14 amending the December 2001 Order in Admin Case 387.

15  
16  
17 **Respondent)** Marlene S. Parsley

18

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CAPACITY AND TRANSMISSION SYSTEM**

**Response to Commission Staff's Information Request  
as set forth in  
Appendix G of the Commission's Order dated December 20, 2001**

**April 24, 2015**

1 **Item 6)** *Based on the most recent demand forecast, the base case*  
2 *demand and energy forecasts and high case demand and energy forecasts*  
3 *for the current year and the following four years. The information should*  
4 *be disaggregated into*

5

6

*a. Native load (firm and non-firm demand) and*

7

*b. Off-system load (both firm and non-firm demand).*

8

9 **Response)** Table 6-G tabulates the forecasted base case and high case demand  
10 and energy in the associated demand breakdowns as requested.

11

12

13 **Respondent)** Marlene S. Parsley

14



**Big Rivers Electric Corporation  
Administrative Case No. 387  
Case No. 2015-00035  
Table 6-G  
Total Native Load and Off-System Loads  
Base and High Case Forecasts**

	Native Load				Off-System Load Demand			
	Base Case		High Case		Base Case		High Case	
	Demand (MW)	Energy (MWH)	Demand (MW)	Energy (MWH)	Firm Demand (MW)	Non-Firm Demand (MW)	Firm Demand (MW)	Non-Firm Demand (MW)
2015	656	3,372,526	695	3,411,421	-	-	-	-
2016	675	3,449,111	805	4,225,110	100	-	-	-
2017	680	3,499,953	917	5,071,720	200	-	-	-
2018	691	3,547,468	1,117	6,735,167	300	-	15	-
2019	695	3,594,657	1,307	7,819,033	400	-	40	-

**Notes and Assumptions -**

1. - Base Case:

Except for internal load growth, replacement of load previously consumed by Smelters is projected as firm off-system sales. Excess generation sales to MISO are not projected as they will be contingent upon unit availability at the time of the system peak and can vary significantly.  
Demand is net of Demand-Side Management/Energy Efficiency Programs.

2. - High Case:

High case represents the optimistic economy scenario.  
Except for pending Off-System Firm sale to Nebraska, load previously consumed by Smelters assumed to be sold entirely within Big Rivers territory, in addition to high growth of existing load due to economics.

3. - Base Case Off-System Firm Demand includes Northeast Nebraska Public Power District; City of Wayne, NB; and City of Wakefield, NB.

**Administrative Case No. 387 / Case No. 2015-00035**

**Respondent: Marlene S. Parsley**

**Attachment for Response to Appendix G Item 6**

**Page 1 of 1**

**BIG RIVERS ELECTRIC CORPORATION**

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**Response to Commission Staff's Information Request  
as set forth in  
Appendix G of the Commission's Order dated December 20, 2001**

**April 24, 2015**

1 **Item 7)** *The target reserve margin currently used for planning*  
2 *purposes, stated as a percentage of demand. If changed from what was in*  
3 *use in 2001, include a detailed explanation for the change.*

4  
5 **Response)** The current target reserve margin used for planning purposes is  
6 7.1% based on Unforced Capacity Ratings of resources as specified by MISO for  
7 the upcoming planning year effective June 1, 2015. For details of how that  
8 margin is derived and used, see MISO's 2015 Loss of Load Expectation Study  
9 available at the following link:

10

11 <https://www.misoenergy.org/Planning/ResourceAdequacy/Pages/ResourceAdequacy.aspx>

12

13

14

15 **Respondent)** Marlene S. Parsley

16

**BIG RIVERS ELECTRIC CORPORATION**

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CAPACITY AND TRANSMISSION SYSTEM**

**Response to Commission Staff's Information Request  
as set forth in  
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**April 24, 2015**

1 **Item 8)** *Projected reserve margins state in megawatts and as a*  
2 *percentage of demand for the current year and the following four years.*  
3 *Identify projected deficits and current plans for addressing these. For*  
4 *each year identify the level of firm capacity purchases projected to meet*  
5 *native load demand.*

6  
7 **Response)** As shown in Table 1 below, Big Rivers is not projecting any deficits.  
8

**Table 1**

<u>Year</u>	<u>Reserve Margin (MW)</u>	<u>Reserve Margin (%)</u>	<u>Firm Capacity Purchases (MW)</u>	<u>Projected Deficit</u>
2015	799	114%	154 *	0
2016	666	80%	154 *	0
2017	553	59%	154 *	0
2018	482	45%	178 *	0
2019	371	32%	178 *	0

9  
10 \* Southeastern Power Administration ("SEPA") is at reduced capacity  
11 until late in 2017, and scheduled to resume full capacity in 2018 and  
12 beyond following its expected return from Force Majeure status.  
13

14  
15 **Respondent)** Marlene S. Parsley



**BIG RIVERS ELECTRIC CORPORATION**

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CAPACITY AND TRANSMISSION SYSTEM**

**Response to Commission Staff's Information Request  
as set forth in  
Appendix G of the Commission's Order dated December 20, 2001**

**April 24, 2015**

1 **Item 9)** *By date and hour, identify all incidents during the just*  
2 *completed calendar year when reserve margin was less than the East*  
3 *Central Area Reliability Council's ("ECAR") 1.5% spinning reserve*  
4 *requirement. Include the amount of capacity resources that were*  
5 *available, the actual demand on the system, and the reserve margin,*  
6 *stated in megawatts and as a percentage of demand. Also, identify system*  
7 *conditions at the time.*

8

9 **Response)** The information originally requested in the above item of Appendix G  
10 of the December 2001 Order in Admin. Case 387 is no longer required pursuant to  
11 Ordering Paragraph No. 5 of the Commission's Order dated March 29, 2004,  
12 amending the December 2001 Order in Admin Case 387.

13

14

15 **Respondent)** Marlene S. Parsley

16

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as set forth in  
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**April 24, 2015**

1 **Item 10)** *A list identifying and describing all forced outages in excess of*  
2 *two hours in duration during the just completed calendar year.*

3

4 **Response)** The information originally requested in the above item of Appendix G  
5 of the December 2001 Order in Admin. Case 387 is no longer required pursuant to  
6 Ordering Paragraph No. 5 of the Commission's Order dated March 29, 2004,  
7 amending the December 2001 Order in Admin Case 387.

8

9

10 **Respondent)** Lawrence V. Baronowsky

11

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**Response to Commission Staff's Information Request  
as set forth in  
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**April 24, 2015**

1 **Item 11)** *A list that identifies scheduled outages or retirements of*  
2 *generating capacity during the current year and the following four years.*

3  
4 **Response)** There are no retirements of generating capacity anticipated through  
5 2019; however, Coleman Units 1 – 3 were temporarily idled in May 2014, due to  
6 the Century Aluminum power sales contract terminations and cessation of the  
7 MISO System Support Resource ("SSR") agreement applicable to the Coleman  
8 units. The planned maintenance outage schedule for 2015 through 2019 is being  
9 provided pursuant to a petition for confidential treatment. The schedule is  
10 regularly modified based on actual operating conditions, forced outages, changes  
11 in the schedule required to meet environmental regulation compliance, fluctuation  
12 in wholesale capacity and energy prices, and other unforeseen events that may  
13 affect unit reliability or generation capacity. The scheduled outages for all units  
14 are listed below:

15  
16 **Wilson Unit 1**

2015  
2016  
2017  
2018  
2019





**BIG RIVERS ELECTRIC CORPORATION**

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**Response to Commission Staff's Information Request  
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**April 24, 2015**

1

**Green Unit 1**

2015  
2016  
2017  
2018  
2019



2

3

**Green Unit 2**

2015  
2016  
2017  
2018  
2019



4

5

**HMP&L Unit 1**

2015  
2016  
2017  
2018  
2019



6

7

**HMP&L Unit 2**

2015  
2016  
2017  
2018  
2019



8

**BIG RIVERS ELECTRIC CORPORATION**

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**Response to Commission Staff's Information Request  
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**April 24, 2015**

1

**Coleman Unit 1**

2015  
2016  
2017  
2018  
2019



2

3

**Coleman Unit 2**

2015  
2016  
2017  
2018  
2019



4

5

**Coleman Unit 3**

2015  
2016  
2017  
2018  
2019



6

7

**BIG RIVERS ELECTRIC CORPORATION**

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**April 24, 2015**

1

**Reid Unit 1**

2015  
2016  
2017  
2018  
2019



2

3

**Reid Combustion Turbine**

2015  
2016  
2017  
2018  
2019



4

5

6

**Respondent)**      Lawrence V. Baronowsky

7

8



**BIG RIVERS ELECTRIC CORPORATION**

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**Response to Commission Staff's Information Request  
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**April 24, 2015**

1 **Item 12)** *Identify all planned base load or peaking capacity additions*  
2 *to meet native load requirements over the next 10 years. Show the*  
3 *expected in-service date, size, and site for all planned additions. Include*  
4 *additions planned by the utility, as well as those by affiliates, if*  
5 *constructed in Kentucky or intended to meet load in Kentucky.*

6

7 **Response)** Big Rivers presently has no plans to make base load or peaking  
8 capacity additions to meet native load requirements for the years 2015 through  
9 2025.

10

11

12 **Respondent)** Marlene S. Parsley

13

**BIG RIVERS ELECTRIC CORPORATION**

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**Response to Commission Staff's Information Request  
as set forth in  
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**April 24, 2015**

1 **Item 13)** *The following transmission energy data for the just completed*  
2 *calendar year and the forecast for the current year and the following four*  
3 *years:*

- 4
- 5 *a. Total energy received from all interconnections and*  
6 *generation sources connected to the transmission system;*  
7 *b. Total energy delivered to all interconnections on the*  
8 *transmission system;*  
9 *c. Peak load capacity of the transmission system; and*  
10 *d. Peak demand for summer and winter seasons on the*  
11 *transmission system.*

12

13 **Response)**

14 a.

Transmission System Energy Received (MWh)

	<u>Generation</u>	<u>Interconnections</u>	<u>Total</u>
2014	10,014,674	9,573,505	19,588,179

Projected System Energy Received (MWh)

2015	19,000,000
2016	19,000,000
2017	19,000,000
2018	19,000,000
2019	19,000,000

15

**BIG RIVERS ELECTRIC CORPORATION**

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1

b.

Transmission System Energy Delivered at Interconnections  
(MWh)

	<u>Total</u>
2014	7,810,407

Projected System Energy Delivered at Interconnection  
(MWh)

2015	7,800,000
2016	7,921,000
2017	8,576,000
2018	9,233,000
2019	9,233,000

2

3

c.

Transmission Peak Capacity (MW)

2014	2,903
------	-------

Projected Transmission Peak Capacity (MW)

2015	2,903
2016	2,903
2017	2,903
2018	2,903
2019	2,903

4

5

6



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1                   d.

Transmission System Peak Demand (MW)

	<u>Winter</u>	<u>Summer</u>
2014	1,806	1,614

Projected System Peak Demand (MW)

	<u>Winter</u>	<u>Summer</u>
2015	1,613	1,638
2016	1,622	1,657
2017	1,636	1,662
2018	1,639	1,673
2019	1,651	1,677

2

3

4 **Respondent)**      Christopher S. Bradley

5

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**April 24, 2015**

1 **Item 14)** *Identify all planned transmission capacity additions for the*  
2 *next ten years. Include the expected in-service date, size and site for all*  
3 *planned additions and identify the transmission need each addition is*  
4 *intended to address.*

5

6 **Response)** A CONFIDENTIAL listing of Big Rivers' planned Transmission  
7 Capacity Additions for 2015 through 2024 is being submitted with a Petition for  
8 Confidential Treatment.

9

10

11 **Respondent)** Christopher S. Bradley

12

In the Matter of:

A REVIEW OF THE ADEQUACY OF )  
KENTUCKY'S GENERATION CAPACITY, ) Administrative Case  
AND TRANSMISSION SYSTEM ) No. 387  
)

REQUEST OF )  
BIG RIVERS ELECTRIC CORPORATION )  
FOR AN EXTENSION TO FILE THE ) Case No.  
ANNUAL INFORMATION REQUIRED BY ) 2015-00035  
AN ORDER IN )  
ADMINISTRATIVE CASE NO. 387 )

SUPPLEMENTAL INFORMATION PROVIDED WITH  
BIG RIVERS' ANNUAL FINANCIAL AND STATISTICAL REPORT  
PURSUANT TO ADMINISTRATIVE CASE NO. 387

**CONFIDENTIAL RESPONSE** to  
Item 14 of the Commission Staff's Information Request  
as set forth in Appendix G of the Commission's Order dated  
December 20, 2001  
FILED: April 24, 2015

INFORMATION SUBMITTED UNDER PETITION FOR  
CONFIDENTIAL TREATMENT



**BIG RIVERS ELECTRIC CORPORATION**

**SUPPLEMENTAL INFORMATION PROVIDED WITH  
BIG RIVERS' ANNUAL FINANCIAL AND STATISTICAL REPORT  
PURSUANT TO ADMINISTRATIVE CASE NO. 387 –  
A REVIEW OF THE ADEQUACY OF KENTUCKY'S GENERATION  
CAPACITY AND TRANSMISSION SYSTEM**

**Response to Commission Staff's Information Request  
as set forth in  
Appendix G of the Commission's Order dated December 20, 2001**

**April 24, 2015**

1 **Supplemental Item 1) *Provide a detailed discussion of the consideration***  
2 ***given to price elasticity in the forecasted demand, energy, and reserve***  
3 ***margin information above.***  
4

5 **Response)** Big Rivers works with and relies on GDS Associates ("GDS") in  
6 developing a formal load forecast every two years. Big Rivers' most recent load  
7 forecast was performed in 2013 and includes the impacts of retail prices on rural  
8 energy consumption and peak demand. Real retail price is a model input in the  
9 energy forecasting models (econometric specifications), so price elasticity is a  
10 derived measure rather than a direct model input. Energy forecasting models  
11 were developed for each of Big Rivers' three Member Cooperatives, and the  
12 derived price elasticities ranged from -0.16 to -0.21. The impact of real retail price  
13 on peak demand was assumed at half of the impact measured for energy sales.

14 Large Industrial loads have generally already invested in cost  
15 effective energy efficiency measures, and they generally maintain low  
16 technological obsolescence. Because of these factors, Large Industrial customers  
17 do not have a significant opportunity for further load reduction based on  
18 increasing efficiency, and Big Rivers assumed the price elasticity of Industrial  
19 customers was equal to zero in the most recent forecast.

20 The impact of price on Big Rivers' reserve margin is consistent with  
21 the price impact on peak demand. As price elasticity impacts demand, this would  
22 flow through the calculation and impact the resulting reserve margin.  
23

**BIG RIVERS ELECTRIC CORPORATION**

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PURSUANT TO ADMINISTRATIVE CASE NO. 387 -  
A REVIEW OF THE ADEQUACY OF KENTUCKY'S GENERATION  
CAPACITY AND TRANSMISSION SYSTEM**

**Response to Commission Staff's Information Request  
as set forth in  
Appendix G of the Commission's Order dated December 20, 2001**

**April 24, 2015**

1

2 **Respondent)** Marlene S. Parsley

3