

SULLIVAN, MOUNTJOY, STAINBACK & MILLER PSC

ATTORNEYS AT LAW

Ronald M. Sullivan

Jesse T. Mountjoy

Frank Stainback

James M. Miller

Michael A. Fiorella

Allen W. Holbrook

R. Michael Sullivan

Bryan R. Reynolds*

Tyson A. Kamuf

Mark W. Starnes

C. Ellsworth Mountjoy

*Also Licensed in Indiana

October 14, 2014

Mr. Jeff Derouen
Executive Director
Public Service Commission
211 Sower Boulevard, P.O. Box 615
Frankfort, Kentucky 40602-0615

RECEIVED

OCT 15 2014

PUBLIC SERVICE
COMMISSION

Re: Big Rivers Electric Corporation's 2014 Integrated Resource Plan
PSC Case No. 2014-00166

Dear Mr. Derouen:

Enclosed are an original and ten (10) copies of (i) Big Rivers Electric Corporation's responses to the supplemental requests for information from the Public Service Commission Staff, the Attorney General, Kentucky Utility Industrial Customers, Inc, and Ben Taylor and Sierra Club; (ii) a petition for confidential treatment; and (iii) a motion for deviation.

I certify that on this date a copy of this letter, a copy of the responses, a copy of the petition, and a copy of the motion were served on each of the persons listed on the attached service list by first class mail.

Sincerely,



Tyson Kamuf

TAK/bh
Enclosures

cc. Service List

Telephone (270) 926-4000

Telecopier (270) 683-6694

100 St. Ann Building

PO Box 727

Owensboro, Kentucky

42302-0727

www.westkylaw.com

SERVICE LIST
P.S.C. Case No. 2014-00166

Michael L. Kurtz, Esq.
Kurt J. Boehm, Esq.
Jody Kyler Cohn, Esq.
Boehm, Kurtz & Lowry
36 East Seventh Street
Suite 1510
Cincinnati, OH 45202

Jennifer Black Hans
Lawrence W. Cook
Angela M. Goad
Assistant Attorneys General
1024 Capital Center Drive
Suite 200
Frankfort, KY 40601

Kristin Henry
Sierra Club
85 Second Street
Second Floor
San Francisco, CA 94105-3441

Shannon Fisk
Earthjustice
1617 John F. Kennedy Boulevard
Suite 1675
Philadelphia, PA 19103

Thomas Cmar
Earthjustice
5042 North Leavitt Street
Suite 1
Chicago, IL 60625

Frank Ackerman
Synapse Energy Economics
485 Massachusetts Avenue
Suite 2
Cambridge, MA 02139

BIG RIVERS ELECTRIC CORPORATION

**2014 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2014-00166**

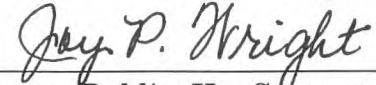
VERIFICATION

I, Lindsay N. Barron, verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.


Lindsay N. Barron

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

3rd SUBSCRIBED AND SWORN TO before me by Lindsay N. Barron on this the
day of October, 2014.


Notary Public, Ky. State at Large
My Commission Expires _____

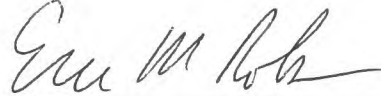
Notary Public, Kentucky State-At-Large
My Commission Expires: July 3, 2018
ID 513528

BIG RIVERS ELECTRIC CORPORATION

**2014 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2014-00166**

VERIFICATION

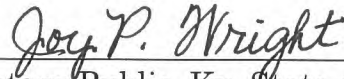
I, Eric M. Robeson, verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Eric M. Robeson

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

3rd SUBSCRIBED AND SWORN TO before me by Eric M. Robeson on this the
 day of October, 2014.



Notary Public, Ky. State at Large
My Commission Expires _____

Notary Public, Kentucky State-At-Large
My Commission Expires: July 3, 2018
ID 513528

BIG RIVERS ELECTRIC CORPORATION

**2014 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2014-00166**

VERIFICATION

I, Donna M. Windhaus, verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Donna M. Windhaus

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Donna M. Windhaus on this
the ___ day of October, 2014.



Notary Public, Ky. State at Large

My Commission Expires 03-03-2018

BIG RIVERS ELECTRIC CORPORATION

**2014 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2014-00166**

VERIFICATION

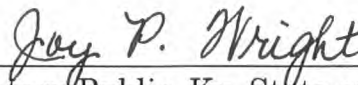
I, Marlene S. Parsley, verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Marlene S. Parsley

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

3rd SUBSCRIBED AND SWORN TO before me by Marlene S. Parsley on this the
3 day of October, 2014.



Notary Public, Ky. State at Large
My Commission Expires _____


Notary Public, Kentucky State-At-Large
My Commission Expires: July 3, 2018
ID 513528

BIG RIVERS ELECTRIC CORPORATION

**2014 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2014-00166**

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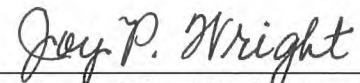
I, Russell L. (Russ) Pogue, verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Russell L. (Russ) Pogue

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Russell L. (Russ) Pogue on
this the 3rd day of October, 2014.



Notary Public, Ky. State at Large
My Commission Expires _____

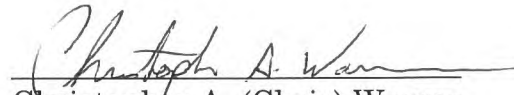
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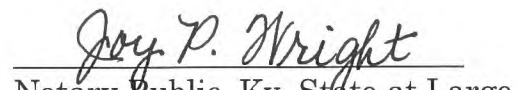
VERIFICATION

I, Christopher A. (Chris) Warren, verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.


Christopher A. (Chris) Warren

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Christopher A. (Chris) Warren
on this the 3rd day of October, 2014.


Notary Public, Ky. State at Large
My Commission Expires _____

Notary Public, Kentucky State-At-Large
My Commission Expires: July 3, 2018
ID 513528

BIG RIVERS ELECTRIC CORPORATION

**2014 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2014-00166**

VERIFICATION

I, Duane E. Braunacker, verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.


Duane E. Braunacker

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Duane E. Braunacker on this
the 3rd day of October, 2014.


Notary Public, Ky. State at Large
My Commission Expires _____

Notary Public, Kentucky State-At-Large
My Commission Expires: July 3, 2018
ID 513528

BIG RIVERS ELECTRIC CORPORATION

**2014 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2014-00166**

VERIFICATION

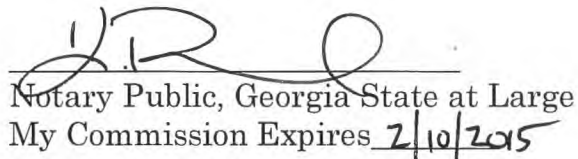
I, John W. Hutts, verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



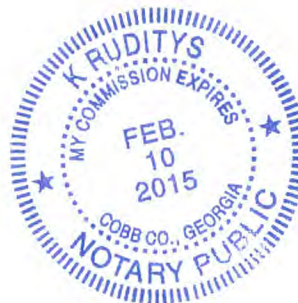
John W. Hutts

STATE OF GEORGIA)
COUNTY OF COBB)

SUBSCRIBED AND SWORN TO before me by John W. Hutts on this the 3rd
day of October, 2014.



Notary Public, Georgia State at Large
My Commission Expires 2/10/2015



BIG RIVERS ELECTRIC CORPORATION

2014 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2014-00166

VERIFICATION

I, Brian D. Smith, verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Brian D. Smith

STATE OF GEORGIA)
COUNTY OF COBB)

SUBSCRIBED AND SWORN TO before me by Brian D. Smith on this the 3RD day of October, 2014.

Notary Public, Georgia State at Large
My Commission Expires 2/10/2015



BIG RIVERS ELECTRIC CORPORATION

**2014 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2014-00166**

VERIFICATION

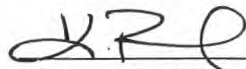
I, Warren E. Hirons, verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Warren E. Hirons

STATE OF GEORGIA)
COUNTY OF COBB)

SUBSCRIBED AND SWORN TO before me by Warren E. Hirons on this the 6TH day of October, 2014.



Notary Public, Georgia State at Large
My Commission Expires 2/10/2015



ORIGINAL

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OCT 15 2014

PUBLIC SERVICE
COMMISSION



Your Touchstone Energy® Cooperative 

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

In the Matter of:

**BIG RIVERS ELECTRIC CORPORATION
2014 INTEGRATED RESOURCE PLAN**

)
) **Case No.**
) **2014-00166**

**Response to the Commission Staff's
Supplemental Request for Information
dated September 26, 2014**

FILED: October 15, 2014

ORIGINAL

BIG RIVERS ELECTRIC CORPORATION
2014 INTEGRATED RESOURCE PLAN
OF BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2014-00166

Response to Commission Staff's
Supplemental Request for Information
Dated September 26, 2014

October 15, 2014

1 **Item 1) Refer to the Big Rivers' Demand-Side Management Potential Study, page**
2 **52, where it states, "For air conditioners, the study used load impact estimates from**
3 **potential studies for utilities in four other states ."**

4 **a. Identify the utilities and other states referenced in this statement.**

5 **b. Explain how and why the utilities in the four other states referenced were**
6 **chosen.**

7 **c. Explain whether the information obtained from the utilities in the four**
8 **other states was adjusted for differences in climate.**

9
10 **Response)**

11 a. Big Rivers does not have this information within its possession, custody, or
12 control. The utilities cannot be identified by GDS Associates because the work was
13 performed by them, on behalf of those utilities, under confidentiality agreements. The states
14 in which these utilities operate are Indiana, South Carolina, Texas and Wisconsin.

15 b. These utilities were chosen because GDS Associates had ready access to
16 estimated air conditioner ("AC") load impacts for these utilities based on detailed modeling
17 and work completed on behalf of these utilities.

BIG RIVERS ELECTRIC CORPORATION
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1 c. Yes, the load impacts from these four utilities were estimated using models of
2 typical AC load impacts under normal weather conditions specific to each utility. In order to
3 estimate the load savings for AC direct control in Big Rivers, the following steps were
4 followed:

- 5 1. Using the four studies mentioned above, a relationship between the
6 modeled AC load savings under various cycling strategies and normal
7 summer cooling degree days (CDD) was developed.
- 8 2. That relationship was applied to normal summer season cooling degree
9 days for the Big Rivers service territory to estimate direct control AC
10 load savings under 33% and 50% cycling strategies for the Big Rivers
11 demand response potential analysis.

12
13 **Witnesses)** Russell L. Pogue and Warren E. Hirons, GDS

BIG RIVERS ELECTRIC CORPORATION
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Response to Commission Staff's
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October 15, 2014

1 **Item 2) Refer to the response to Item 2 of Commission Staff's Initial Request for**
2 **Information ("Staff's First Request") .**

3 **a. Explain how the information in the technical reference manuals was**
4 **adapted to fit the climate in Big Rivers' service territory.**

5 **b. Explain how the technical reference manuals were used to determine**
6 **which end uses were targeted.**

7

8 **Response)**

9 a. The response to Item 2 of Commission Staff's Initial Request for Information
10 refers specifically to the Mid-Atlantic Technical Reference Manual. This document was only
11 used to develop savings assumptions for one weather-sensitive measure (ECM Furnace Fan).
12 The savings estimates provided in the Mid-Atlantic TRM for this measure were adjusted for
13 estimated Kentucky heating & cooling degree days. There was one additional set of weather-
14 sensitive measure savings assumptions based on the Indiana TRM (ENERGY STAR Room
15 Air Conditioner). The savings estimates provided in the Indiana TRM for this measure were
16 adjusted by using the full load hours estimated of Ft. Wayne, Indiana, which is closest to Big
17 Rivers territory among the options provided in the Indiana TRM. No other Technical

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1 Reference Manuals were used in the development of weather-sensitive measure savings
2 assumptions.

3 b. The Technical Reference Manuals were not used to determine which end-uses
4 were targeted. The end-uses were determined by GDS as part of the development of the
5 energy efficiency potential study. The Technical Reference Manuals were referenced to
6 support the development of measure costs, savings, and useful life assumptions used for the
7 energy efficiency potential study.

8

9 **Witnesses)** Russell L. Pogue and Warren E. Hirons, GDS

BIG RIVERS ELECTRIC CORPORATION
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Response to Commission Staff's
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October 15, 2014

1 **Item 3)** **Refer to the response to Item 9 of Staff's First Request. That request's**
2 **reference to the increase of "approximately 800 percent between 2016 and 2021" was**
3 **intended to elicit a response as to why the increase was not more gradual and was of**
4 **such a large percentage over only five years. Provide a supplemental response based on**
5 **this clarification of the original request.**

6
7 **Response)** Because replacement load is envisioned to take a number of potential forms
8 (including sales into the MISO markets, long and short-term forward bilateral sales with
9 counterparties, long and short-term capacity sales, long-term wholesale agreements, existing
10 load expansion, attracting new industrial load, and attracting new Members), Big Rivers'
11 management believes that when the market is stronger, replacement will occur
12 quickly. Moreover, because the replacement load includes more than just new native sales, it
13 is envisioned that replacement can occur in a short time frame. To clarify, Big Rivers'
14 management is not contending that all replacement load will be in long-term contracts, only
15 that replacement load will be sold to counterparties or in the market at prices that bring value
16 to Big Rivers' Members. Big Rivers continues to evaluate a range of possible quantities for
17 replacement load, and it recognizes that the actual quantity of replacement load achieved will
18 vary based upon a number of factors, including future market prices and environmental

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1 regulations. For example, Big Rivers evaluated a load replacement of 400 MW over a four
2 year period in its most recent financial forecast, which is provided in response to AG 2-2.

3

4 **Witness)** Lindsay N. Barron

BIG RIVERS ELECTRIC CORPORATION
2014 INTEGRATED RESOURCE PLAN
OF BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2014-00166

Response to Commission Staff's
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October 15, 2014

1 **Item 4)** Refer to the response to Item 11.a. of Staff's First Request. Provide a
2 description of Pennyrile Energy, LLC and an explanation of the expected growth in its
3 load in the years 2014 and 2015.

4

5 **Response)** Pennyrile Energy, LLC operates a coal mine, Riveredge Mine, in Calhoun,
6 KY. Riveredge has been ramping up its operations, and its projected load included in the
7 forecast shown in Table 4.7 of the IRP assumed an increase in peak demand from [REDACTED]
8 [REDACTED] to [REDACTED], [REDACTED]. Its projected energy
9 consumption was [REDACTED] in 2014 and [REDACTED] in 2015.

10

11 **Witness)** Lindsay N. Barron

BIG RIVERS ELECTRIC CORPORATION
2014 INTEGRATED RESOURCE PLAN
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Response to Commission Staff's
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October 15, 2014

1 **Item 5)** **Refer to the response to Item 20.b. of Staff's First Request. Explain why**
2 **Jackson Purchase Energy's results are so much lower than the results of the other two**
3 **distribution cooperatives.**

4
5 **Response)** Combined, Kenergy Corp. and MCRECC spent \$518,855 in
6 weatherization spend, while Jackson Purchase Energy spent \$19,217. Changes were made in
7 the weatherization program in 2013, which required modification to the tariff submitted
8 February 22, 2013 and approved June 6, 2013. Kenergy and MCRECC received approval of
9 their tariffs on June 28, 2013, while Jackson Purchase received approval September 6, 2013.
10 Both Kenergy Corp. and MCRECC had participated in the weatherization program in 2012
11 and therefore were in a position to move quickly upon approval. Jackson Purchase Energy
12 had not offered the program in the past and introducing a weatherization program requires
13 significant lead time before weatherization begins. A substantial effort was made to get the
14 weatherization program up to speed at Jackson Purchase Energy in 2013, but starting the
15 program during the holiday season added additional complexity. In 2014 Jackson Purchase
16 Energy is meeting weatherization goals.

17

18 **Witness)** Russell L. Pogue

BIG RIVERS ELECTRIC CORPORATION
2014 INTEGRATED RESOURCE PLAN
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Response to Commission Staff's
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Dated September 26, 2014

October 15, 2014

1 **Item 6)** **Refer to the response to Item 29 of Staff's First Request, which states that**
2 **the Wilson Station currently has an idle date of January 1, 2016 , but that it is not**
3 **expected to be idled at that time "given current market conditions." Explain what has**
4 **occurred since Big Rivers' notification to the Commission that the Wilson Station would**
5 **be idled that causes Big Rivers to now believe that the station will not be idled.**

6

7 **Response)** Market prices for energy and capacity continue to show signs of increase. Big
8 Rivers notified the Commission on several occasions of postponements of the idling of
9 Wilson Station, the most recent being a postponement until January 2016. Big Rivers has not
10 yet postponed the idling of Wilson Station with MISO beyond January 1, 2016; however,
11 given current year and projected future market prices, it is anticipated that Wilson will be
12 cost-effective to operate indefinitely.

13

14 **Witness)** Lindsay N. Barron

BIG RIVERS ELECTRIC CORPORATION
2014 INTEGRATED RESOURCE PLAN
OF BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2014-00166

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October 15, 2014

1 **Item 7) Refer to the response to Item 13 of the Initial Request of the Attorney**
2 **General, which states that the operation of the Wilson Station through 2015 has added**
3 **value to Big Rivers' Members, "both through increased margins for the organization**
4 **and direct savings that flow to Members through the Fuel Adjustment Clause on a near**
5 **real- time basis." Explain whether these "direct savings" refer to fuel costs assigned to**
6 **off- system sales being subtracted from fuel costs charged to native load customers in**
7 **calculating Big Rivers' monthly fuel adjustment clause factors. If not, explain.**

8
9 **Response)** Big Rivers' operation of Wilson Station has increased margins for the
10 organization and provided direct savings to Big Rivers' Members through the Fuel
11 Adjustment Clause. The "direct savings" referenced do not refer to fuel costs assigned to
12 off-system sales being subtracted from fuel costs charged to native load customers in
13 calculating Big Rivers' monthly fuel adjustment clause (FAC) factors. The "direct savings"
14 refer to the overall reduction in Big Rivers' average cost of fuel that flows through the
15 FAC. Because Big Rivers is operating Wilson Station, it has been able to procure coal for
16 the operation of Wilson Station at spot market prices which are lower than the price of coal
17 Big Rivers has under contract. As a result of including this lower cost fuel in the calculation
18 of average fuel costs, Big Rivers' average cost per MWh for fuel has decreased by roughly

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1 \$2.25 per MWh versus what it would have been if Wilson were not operating. This reduction
2 in average fuel cost is directly, and on a near-real time basis, reducing the cost Big Rivers'
3 Members are actually paying for fuel through the FAC. Big Rivers' Members will save an
4 estimated \$5.8 million in 2014 through reduced fuel costs driven solely by the continued
5 operation of Wilson Station. It is estimated that the Members will directly save \$7.1 million
6 in 2015 as a result of Wilson's continued operation.

7

8 **Witness)** Lindsay N. Barron