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Skill. Integrity. Efficiency.

January 23, 2017

VIA FEDERAL EXPRESS

Dr. Talina R. Mathews
Executive Director
Public Service Commission
211 Sower Boulevard, P.O. Box 615
Frankfort, Kentucky 40602-0615

RECEIVED

JAN 24 2017

PUBLIC SERVICE
COMMISSION

Re: *In the Matter of: an Examination by the Public Service Commission of the Environmental Surcharge Mechanism of Big Rivers Electric Corporation for the Six-Month Billing Period Ending July 31, 2016 and the Pass Through Mechanism of its Three Member Distribution Cooperatives,*
PSC Case No. 2016-00368

Dear Dr. Mathews:

Enclosed for filing in the above-referenced matter are an original and seven (7) copies of Big Rivers Electric Corporation's responses to the Public Service Commission Staff's second request for information in the above-referenced matter. I certify that on this date, a copy of this letter and a copy of the responses were served on all parties of record.

Sincerely,

Tyson Kamuf

TAK/abg

Enclosures

cc: DeAnna Speed
Dennis L. Cannon
Marty Littrel
Jeff Hohn

BIG RIVERS ELECTRIC CORPORATION
AN EXAMINATION
BY THE PUBLIC SERVICE COMMISSION
OF THE ENVIRONMENTAL SURCHARGE MECHANISM OF BIG
RIVERS ELECTRIC CORPORATION FOR THE
SIX-MONTH BILLING PERIOD ENDING
JULY 31, 2016 AND THE PASS THROUGH MECHANISM
OF ITS THREE MEMBER DISTRIBUTION COOPERATIVES
CASE NO. 2016-00368

VERIFICATION

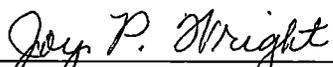
I, Nicholas R. (Nick) Castlen, verify, state, and affirm that I prepared or supervised the preparation of my responses to data requests filed with this Verification, and that those responses are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Nicholas R. (Nick) Castlen

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Nicholas R. (Nick) Castlen
on this the 18 day of January, 2017.



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



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

ORIGINAL



Your Touchstone Energy® Cooperative 

RECEIVED

JAN 24 2017

PUBLIC SERVICE
COMMISSION

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

In the Matter of:

**AN EXAMINATION)
BY THE PUBLIC SERVICE COMMISSION)
OF THE ENVIRONMENTAL SURCHARGE)
MECHANISM OF BIG RIVERS ELECTRIC)
CORPORATION FOR THE)
SIX-MONTH BILLING PERIOD ENDING)
JULY 31, 2016)
AND THE PASS THROUGH MECHANISM)
OF ITS THREE MEMBER DISTRIBUTION)
COOPERATIVES)**

**Case No.
2016-00368**

**Responses to Commission Staff's
Second Request for Information
dated January 10, 2017**

FILED: January 24, 2017

ORIGINAL

BIG RIVERS ELECTRIC CORPORATION

**AN EXAMINATION BY THE PUBLIC SERVICE COMMISSION
OF THE ENVIRONMENTAL SURCHARGE MECHANISM
OF BIG RIVERS ELECTRIC CORPORATION
FOR THE SIX-MONTH BILLING PERIOD ENDING JULY 31, 2016
AND THE PASS THROUGH MECHANISM
OF ITS THREE MEMBER DISTRIBUTION COOPERATIVES
CASE NO. 2016-00368**

**Response to Commission Staff's
Second Request for Information
dated January 10, 2017**

January 24, 2017

1 **Item 1)** *Refer to pages 14 and 15 of the Direct Testimony of Nicholas R.*
2 *Castlen ("Castlen Testimony"), Big Rivers' response to Item (c) of Staff's*
3 *questions regarding consideration of direct billing of environmental costs.*
4

5 *a. Confirm that the reference to February 2016 on line 18 is*
6 *incorrect, and that Big Rivers meant to refer to January 2016.*

7 *b. If part a. of this question is not confirmed, explain why the*
8 *reference to February 2016 is correct.*

9 *c. Explain in detail why direct billing requires additional time to*
10 *compile and finalize environmental costs that are not currently*
11 *necessary for Big Rivers to calculate an environmental*
12 *surcharge factor.*
13

14 **Response)**

15 a. The reference to February 2016 on page 14, line 18, of the Castlen
16 Testimony is correct.

17 b. The section of the Castlen Testimony referenced in this question is an
18 explanation of the hypothetical process for how Big Rivers would bill
19 its environmental costs as a direct amount based on the monthly
20 wholesale sales to each Member Cooperative in response to the
21 Commission Staff's questions in its November 15, 2016, Order

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1 regarding Big Rivers' consideration of direct billing. For purposes of
2 responding to the Commission Staff's questions on direct billing, in
3 both the Castlen Testimony and these responses, Big Rivers assumed
4 direct billing to mean that each month Big Rivers would bill its
5 monthly environmental costs as a direct amount based on the monthly
6 wholesale sales to each Member Cooperative during that same month.
7 For example, Big Rivers' actual February 2016 environmental costs
8 would be allocated (*i.e.*, billed) directly to each of its Member
9 Cooperatives based on each Member Cooperative's proportionate
10 share of Big Rivers' total February 2016 sales.

11 As explained in the Castlen Testimony (page 14, lines 9 - 14),
12 under Big Rivers' current ES mechanism, Big Rivers calculates the
13 monthly ES factor based on its actual environmental costs and
14 revenues during a given expense month (*e.g.*, January 2016) and
15 applies that ES factor to its Member Cooperatives' invoices for service
16 delivered during the following service month (*e.g.*, February 2016).

17 However, under the direct billing approach, in which Big Rivers'
18 monthly environmental costs for a given month (*e.g.*, February 2016)
19 would be allocated (*i.e.*, billed) directly to its Member Cooperatives
20 based on the wholesale sales to each Member Cooperative during that
21 same month (*e.g.*, February 2016), the expense month and service

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1 month would be the same. This is why the reference to February 2016
2 on page 14, line 18, of the Castlen Testimony is correct.

- 3 c. Direct billing would not require additional time to compile and finalize
4 environmental costs than what is currently required for Big Rivers
5 when calculating its monthly environmental surcharge factor. Big
6 Rivers' monthly accounting close process, which includes compiling
7 and finalizing environmental costs for the month, is generally
8 completed by the fifteenth day of the following month. For example,
9 the monthly accounting data for February 2016 was finalized on
10 March 15, 2016. Changing to a direct billing approach for Big Rivers'
11 monthly environmental costs would not be expected to impact this
12 timeframe. However, as explained in the Castlen Testimony
13 (beginning on page 14, line 14), changing to a direct billing approach
14 would increase the time required by Big Rivers to prepare and issue
15 its Member Cooperatives' monthly invoices.

16 Using the February 2016 service month as an example, under
17 Big Rivers' current ES mechanism, Big Rivers calculated an ES factor
18 of 6.599949% for the January 2016 expense month (*i.e.*, based on Big
19 Rivers' actual environmental costs and revenues for January 2016)
20 and filed that ES factor with the Commission by letter dated February
21 18, 2016. Pursuant to the requirement of KRS 278.183 that the

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1 environmental surcharge be filed with the Commission ten (10) days
2 before it is scheduled to go into effect, Big Rivers was able to prepare
3 and issue invoices to its Member Cooperatives for February 2016
4 service on March 4, 2016, using the ES factor of 6.599949% calculated
5 for the January 2016 expense month.

6 Alternatively, if Big Rivers billed its environmental costs as a
7 direct amount based on the monthly wholesale sales to each Member
8 Cooperative during that month, it would not have been able to issue
9 invoices to its Member Cooperatives for February 2016 until March 25,
10 2016. In order for Big Rivers to bill its actual environmental costs for
11 February 2016 to its Member Cooperatives based on their February
12 2016 service, it would first have to know what its actual environmental
13 costs for February 2016 were. As previously stated, Big Rivers'
14 monthly accounting close process is generally completed by the
15 fifteenth day of the following month. Accordingly, Big Rivers'
16 accounting records for February 2016 were finalized on March 15,
17 2016.

18 Once Big Rivers obtained the necessary detail of its actual
19 environmental costs for February 2016 from the month's final
20 accounting records, it would then need to allocate those costs directly
21 to each of its Member Cooperatives proportionately based on each

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1 Member Cooperative's total revenues, or volumes, for February 2016
2 to determine the environmental surcharge amounts to be billed
3 directly to each Member Cooperative. Assuming Big Rivers calculated,
4 and filed with the Commission, the environmental surcharge amounts
5 to be billed directly to each Member Cooperative for February 2016
6 service on the same date that the necessary accounting data first
7 became available (*i.e.*, March 15, 2016), the earliest date which Big
8 Rivers could bill those amounts to its Member Cooperatives would
9 have been March 25, 2016 (*i.e.*, ten (10) days after the surcharge was
10 filed with the Commission, pursuant to KRS 278.183), compared with
11 March 4, 2016, under Big Rivers' existing ES mechanism.

12
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14
15

Witness) Nicholas R. Castlen

BIG RIVERS ELECTRIC CORPORATION
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1 **Item 2)** *Refer to page 17 of the Castlen Testimony. Provide the reasons*
2 *or factors why the Member Cooperatives believe direct billing would not*
3 *result in less volatility in the billings to their retail customers.*
4

5 **Response)** Big Rivers calculated what its ES factors (as a percent of revenues)
6 would have been if it billed its monthly environmental costs as a direct amount
7 based on the monthly wholesale sales to each Member Cooperative during the
8 expense months corresponding to the billing period under review (*i.e.*, December
9 2015 through May 2016). Big Rivers then calculated the standard deviation of the
10 pro forma monthly ES factors (calculated based on the direct billing method) and
11 compared it to the standard deviation of Big Rivers' actual monthly ES factors (as
12 filed, based on Big Rivers' current ES tariff) for the same months. The detailed
13 calculations and results of the analysis are provided in the attachment to this
14 response.

15 The standard deviation of Big Rivers' actual monthly ES factors for the
16 expense months covered by the billing period under review was 0.983%. The
17 standard deviation of the pro forma ES factors, calculated for the same months
18 based on the direct billing method, was 1.391%. As shown on page 2 of 2 of the
19 attachment, Big Rivers' ES factors during the review period would have been 42%
20 more volatile if Big Rivers had billed its environmental costs as a direct amount
21 based on the monthly wholesale sales to each Member Cooperative.

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1 The primary difference between Big Rivers' current ES factor and the
2 direct billing method is the over- or under-recovery mechanism used in Big Rivers'
3 current ES factor to account for the difference between the average Member
4 revenues used to calculate the ES factor for a given expense month and the actual
5 Member revenues during the related service month to which the ES factor is
6 applied. Because the over- or under-recovery fluctuates each month, and can either
7 increase or decrease the month-to-month volatility, Big Rivers' ES charges could be
8 more or less volatile under Big Rivers' current ES mechanism than the direct billing
9 method, depending on the over- or under-recovery amounts during the period
10 reviewed.

11 Although the attached analysis shows that the direct billing approach
12 would have resulted in higher volatility in Big Rivers' monthly ES charges as a
13 percent of revenue during the current review period, these results are not
14 necessarily indicative of all other periods. However, the analysis does show that
15 billing Big Rivers' environmental costs as a direct amount based on the monthly
16 wholesale sales to each Member Cooperative would not necessarily cause the
17 environmental surcharge billings to be less volatile. Based on the relationship
18 between Big Rivers' monthly environmental surcharge and the Member
19 Cooperatives' pass through mechanisms, the Member Cooperatives also believe
20 direct billing would not necessarily reduce volatility in the billings to their retail
21 customers

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January 24, 2017

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Witness) Nicholas R. Castlen

**Big Rivers Electric Corporation
Case No. 2016-00368**

**Volatility Analysis - Comparison of Total E(m) and Monthly ES Factor Under Current ES Mechanism vs. Direct Billing Method
Expense Months for Review Period (December 2015 - May 2016)**

		Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
Current ES Mechanism (As Filed):							
(1) Rate Base (RB) (Form 2.00)		\$ 26,057,346	\$ 26,628,176	\$ 27,113,110	\$ 28,347,063	\$ 29,174,059	\$ 29,446,045
(2) Rate Base / 12		\$ 2,171,446	\$ 2,219,015	\$ 2,259,426	\$ 2,362,255	\$ 2,431,172	\$ 2,453,837
(3) Rate of Return (RORORB)		6.14%	6.15%	6.24%	6.16%	6.20%	6.18%
(4) Return on Rate Base (RORB)	(2) x (3)	\$ 133,327	\$ 136,469	\$ 140,988	\$ 145,515	\$ 150,733	\$ 151,647
(5) Operating Expenses (Form 2.00)		\$ 1,872,922	\$ 1,849,337	\$ 2,249,027	\$ 2,307,761	\$ 2,551,737	\$ 2,392,474
(6) By-Product and Emission Allowance Sales (BAS) (Form 2.00)		\$ -	\$ -	\$ -	\$ -	\$ 91	\$ -
(7) Sub-Total E(m)	(4) + (5) - (6)	\$ 2,006,249	\$ 1,985,806	\$ 2,390,015	\$ 2,453,276	\$ 2,702,379	\$ 2,544,121
(8) Member System Allocation Ratio for the Month (Form 3.00)		56.541927%	55.996848%	51.800691%	52.377123%	48.671082%	47.519361%
(9) Subtotal E(m) = Subtotal E(m) x Member System Allocation Ratio	(7) x (8)	\$ 1,134,372	\$ 1,111,989	\$ 1,238,044	\$ 1,284,955	\$ 1,315,277	\$ 1,208,950
(10) Adjustment for (Over)/Under Recovery, as applicable (Form 2.00)		\$ 81,322	\$ 27,742	\$ (263,421)	\$ (76,323)	\$ 86,801	\$ 187,590
(10a) Prior Period Adjustment		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(11) E(m) = Subtotal E(m) plus (Over)/Under Recovery	(9) + (10) + (10a)	\$ 1,215,694	\$ 1,139,731	\$ 974,623	\$ 1,208,632	\$ 1,402,078	\$ 1,396,540
(12) R(m) = 12-Mo. Average Monthly Member Revenue (Excl. ES) (Form 3.00)		\$ 17,246,273	\$ 17,268,784	\$ 17,090,025	\$ 16,866,302	\$ 16,953,598	\$ 16,963,212
(13) CESF: E(m) / R(m); as a % of Revenue (As Filed)	(11) ÷ (12)	7.049024%	6.599949%	5.702876%	7.165957%	8.270091%	8.232757%
Standard Deviation of E(m) as a % of Revenue (As Filed):						0.983%	

**Big Rivers Electric Corporation
Case No. 2016-00368**

**Volatility Analysis - Comparison of Total E(m) and Monthly ES Factor Under Current ES Mechanism vs. Direct Billing Method
Expense Months for Review Period (December 2015 - May 2016)**

		Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
Direct Billing Calculations (Pro Forma):							
(1) Rate Base (RB) (Form 2.00)		\$ 26,057,346	\$ 26,628,176	\$ 27,113,110	\$ 28,347,063	\$ 29,174,059	\$ 29,446,045
(2) Rate Base / 12		\$ 2,171,446	\$ 2,219,015	\$ 2,259,426	\$ 2,362,255	\$ 2,431,172	\$ 2,453,837
(3) Rate of Return (RORORB)		6.14%	6.15%	6.24%	6.16%	6.20%	6.18%
(4) Return on Rate Base (RORB)	(2) x (3)	\$ 133,327	\$ 136,469	\$ 140,988	\$ 145,515	\$ 150,733	\$ 151,647
(5) Operating Expenses (Form 2.00)		\$ 1,872,922	\$ 1,849,337	\$ 2,249,027	\$ 2,307,761	\$ 2,551,737	\$ 2,392,474
(6) By-Product and Emission Allowance Sales (BAS) (Form 2.00)		\$ -	\$ -	\$ -	\$ -	\$ 91	\$ -
(7) Sub-Total E(m)	(4) + (5) - (6)	\$ 2,006,249	\$ 1,985,806	\$ 2,390,015	\$ 2,453,276	\$ 2,702,379	\$ 2,544,121
(8) Member System Allocation Ratio for the Month (Form 3.00)		56.541927%	55.996848%	51.800691%	52.377123%	48.671082%	47.519361%
(9) Subtotal E(m) = Subtotal E(m) x Member System Allocation Ratio	(7) x (8)	\$ 1,134,372	\$ 1,111,989	\$ 1,238,044	\$ 1,284,955	\$ 1,315,277	\$ 1,208,950
(10) R(m) = Current Month Total Member Revenue (Excluding ES)		\$ 16,886,173	\$ 20,983,257	\$ 18,425,207	\$ 15,567,968	\$ 14,248,502	\$ 15,274,163
(11) CESF: E(m) / R(m); as a % of Revenue (Pro Forma)	(9) ÷ (10)	6.717757%	5.299411%	6.719295%	8.253839%	9.230984%	7.915000%
Standard Deviation of E(m) as a % of Revenue (Pro Forma):						1.391%	

Summary:

(a) Standard Deviation of Pro Forma ES Charges Under Direct Bill Method:	1.391%
(b) Standard Deviation of Actual ES Charges Under Big Rivers' Current ES Tariff:	0.983%
(c) Change in Standard Deviation:	[(a) - (b)] 0.408%
(d) % Change in Standard Deviation:	[(c) / (b)] 42%