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July 5, 2018

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JUL 06 2018

Ms. Gwen R. Pinson
Executive Director
Public Service Commission
211 Sower Boulevard, P.O. Box 615
Frankfort, KY 40602-0615

PUBLIC SERVICE
COMMISSION

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 January 31, 2018
and the Pass Through Mechanism of Its Three Member Distribution
Cooperatives - PSC Case No. 2018-00163***

Dear Ms. Pinson:

Enclosed for filing in the above-referenced matter are an original and six (6) copies of: (i) the Direct Testimony of Nicholas R. Castlen on behalf of Big Rivers Electric Corporation, Jackson Purchase Energy Corporation, Kenergy Corp., and Meade County Rural Cooperative Corporation and (ii) Big Rivers Electric Corporation's responses to the Public Service Commission Staffs first request for information dated June 13, 2018.

Please confirm the Commission's receipt of filing by placing its file-stamp on the enclosed additional copy and returning it in the self-address, post-paid envelop.

I certify that on this date, a copy of this letter and all attachments were served on all parties of record by first class mail.

Sincerely,

Tyson Kamuf

Enclosures

cc: Dennis Cannon
Jeffrey Hohn
Marty Littrel

ORIGINAL



Your Touchstone Energy® Cooperative 

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)
JANUARY 31, 2018 AND THE PASS)
THROUGH MECHANISM OF ITS THREE)
MEMBER DISTRIBUTION COOPERATIVES)**

**Case No.
2018-00163**

Direct Testimony of Nicholas R. Castlen

and

**Responses to Commission Staff's
First Request for Information
dated June 13, 2018**

FILED: July 6, 2018

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**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 JANUARY 31,)
2018, AND THE PASS THROUGH)
MECHANISM FOR ITS THREE MEMBER)
DISTRIBUTION COOPERATIVES)**

**Case No.
2018-00163**

DIRECT TESTIMONY

OF

NICHOLAS R. (NICK) CASTLEN

ON BEHALF OF

**BIG RIVERS ELECTRIC CORPORATION,
JACKSON PURCHASE ENERGY CORPORATION,
KENERGY CORP., AND
MEADE COUNTY RURAL ELECTRIC COOPERATIVE CORPORATION**

FILED: July 6, 2018

**Case No. 2018-00146
Witness: Nicholas R. Castlen
Page 1 of 9**

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2 **Q. Please summarize your duties at Big Rivers.**

3 A. As the Manager of Finance, my primary responsibilities involve providing
4 direction and oversight to corporate accounting and finance activities
5 including financial reporting and analysis, debt administration, forecasting,
6 cash management, and taxes. Additionally, I am responsible for Big Rivers'
7 Fuel Adjustment Clause (FAC) and Environmental Surcharge (ES) rate
8 mechanisms and the related filings with the Kentucky Public Service
9 Commission (the "Commission").

10 **Q. Have you previously testified before the Commission?**

11 A. Yes. I have served as witness, providing testimony and responses to data
12 requests, in Case Nos. 2012-00534, 2013-00139, 2013-00347, 2014-00097,
13 2014-00323, 2015-00124, 2015-00320, 2016-00124, 2016-00368, and 2017-
14 00345 (reviews of Big Rivers' ES mechanism). I have also served as a
15 witness, providing testimony and/or responses to data requests, in Case Nos.
16 2012-00555, 2013-00266, 2013-00449, 2014-00230, 2014-00455, 2015-00237,
17 2016-00006, 2016-00235, 2017-00006, 2017-00287, and 2018-00023 (reviews
18 of Big Rivers' FAC mechanism).

19 **Q. On whose behalf are you filing this testimony?**

20 A. I am filing this testimony on behalf of Big Rivers and its three member
21 distribution cooperatives, which are Jackson Purchase Energy Corporation
22 ("JPEC"), Kenergy Corp. ("Kenergy"), and Meade County Rural Electric

1 Cooperative Corporation ("Meade County") (collectively, the "Members").

2 **Q. What is the purpose of your testimony in this proceeding?**

3 A. The purpose of my testimony is to describe the application of Big Rivers' ES
4 mechanism as billed from August 1, 2017, through January 31, 2018, (which
5 corresponds to Big Rivers' expense months of June 2017 through November
6 2017). Additionally, I have coordinated with Big Rivers' Members in the
7 preparation of this testimony and prepared responses to the Commission
8 Staff's First Request for Information in this case, dated June 13, 2018,
9 ("Staff's First Requests") which accompany this testimony.

10 This testimony also includes information the Members have provided
11 me in support of their pass-through mechanisms which are also under review
12 in this proceeding, and that the Members use to pass through, to their retail
13 members, the costs Big Rivers charges to them under Big Rivers' ES
14 mechanism. The review periods for the Members' pass-through mechanisms,
15 which correspond to the August 2017 through January 2018 billing months
16 for Big Rivers' ES mechanism, are the billing months of September 2017
17 through February 2018 for non-dedicated delivery point customers (*i.e.*, there
18 is a one-month lag for non-dedicated delivery point customers) and August
19 2017 through January 2018 for large commercial and industrial, dedicated
20 delivery point, customers (*i.e.*, there is no billing lag for dedicated delivery
21 point customers).

22 **Q. Please provide a brief overview of Big Rivers' ES mechanism.**

1 A. Big Rivers' ES mechanism was approved by Order of the Commission dated
2 June 25, 2008, in Case No. 2007-00460, which was part of the transaction
3 that unwound Big Rivers' 1998 lease with E.ON U.S. LLC and its affiliates
4 (the "Unwind Transaction") that was approved by Order of the Commission
5 dated March 6, 2009, in Case No. 2007-00455. Big Rivers' ES went into effect
6 immediately following the July 16, 2009, closing of the Unwind Transaction
7 for service commencing July 17, 2009.

8 Big Rivers' environmental compliance plan, approved by the
9 Commission in Case No. 2007-00460 (the "2007 Plan"), consists of programs
10 and the related costs for controlling sulfur dioxide ("SO₂"), nitrogen oxide
11 ("NO_x"), and sulfur trioxide ("SO₃"). The environmental compliance costs,
12 which Big Rivers may recover under KRS 278.183 and its 2007 Plan, include
13 the costs of reagents, sludge and ash disposal, and emission allowances.

14 For the SO₂ program, Big Rivers recovers through its ES mechanism
15 the costs of reagents, the costs for the disposal of coal combustion byproducts
16 (fly ash, bottom ash, and scrubber sludge), and the costs of SO₂ emission
17 allowances used. For the NO_x program, Big Rivers recovers the costs of
18 reagents and the costs of NO_x emission allowances used. For the SO₃
19 program, Big Rivers recovers reagent costs.

20 Due to generating unit design differences and Big Rivers' compliance
21 plan, each of Big Rivers' generating units utilizes a different combination of
22 reagents. Depending on the unit facilities, various reagents are used to treat

1 the flue gas, thereby removing the three targeted emissions. The reagents
2 used to control SO₂ include emulsified sulfur, lime, fixation lime, limestone,
3 dibasic acid, and sodium bisulfite. The reagents used to control NO_x include
4 anhydrous ammonia and emulsified sulfur. The reagent used to control SO₃
5 is hydrated lime. Note that the 2007 Plan included only variable operations
6 and maintenance ("O&M") costs.

7 In its Order dated October 1, 2012, in Case No. 2012-00063, the
8 Commission approved certain additions to Big Rivers' 2007 Plan relating to
9 the Mercury and Air Toxics Standards (MATS) rule. The additions (the "2012
10 Plan") included installing activated carbon injection and dry sorbent injection
11 systems and emission control monitors at Big Rivers' Coleman, Wilson, and
12 Green generating stations; and installing emission control monitors at
13 Henderson Municipal Power & Light's Station Two generating station, which
14 Big Rivers will operate until no later than May 31, 2019, pursuant to the
15 authority Big Rivers has requested in Case No. 2018-00146. The 2012 Plan
16 includes both capital and O&M costs associated with the projects, as well as
17 recovery of Big Rivers' actual costs incurred in Case No. 2012-00063
18 (amortized over three years).

19 Due to the terminations of retail power contracts with two aluminum
20 smelters, Big Rivers idled its Coleman generating station in May 2014. As a
21 result, Big Rivers does not plan to proceed with the MATS projects for the
22 Coleman station at this time. However, if Big Rivers decides to return the

1 Coleman station to service, it will be required to complete the MATS projects
2 before doing so.

3 Big Rivers' ES mechanism allows Big Rivers to recover costs related to
4 its 2007 Plan (which includes only variable O&M costs) and its 2012 Plan
5 (which includes both O&M and capital costs, as well as a rate of return on
6 the unrecovered portion of its capital costs), less proceeds from by-product
7 and emission allowance sales, plus or minus an ongoing cumulative under-
8 or over-recovery adjustment.

9 **Q. Please provide a brief overview of the Members' pass-through**
10 **mechanisms.**

11 **A.** The Members' pass-through mechanisms allow each Member to bill its retail
12 customers for the portion of Big Rivers' environmental surcharge that it was
13 billed. JPEC's pass-through mechanism was approved by the Commission in
14 Case No. 2008-00010; Kenergy's pass-through mechanism was approved by
15 the Commission in Case No. 2008-00009; and Meade County's pass-through
16 mechanism was approved by the Commission in Case No. 2007-00470.

17 **Q. Have there been any changes to Big Rivers' ES mechanism since the**
18 **prior review?**

19 **A.** No.

20 **Q. Has Big Rivers' ES mechanism been accurately compiled, and is it**
21 **operating as intended?**

22 **A.** Yes.

1 **Q. Did Big Rivers sell any SO₂ or NO_x allowances during the expense**
2 **months corresponding to the billing periods under review in this**
3 **case?**

4 A. No.

5 **Q. Did Big Rivers recover any capital costs through its ES mechanism**
6 **during the period under review?**

7 A. Yes. Pursuant to the Commission's October 1, 2012 Order, in Case No. 2012-
8 00063, Big Rivers recovered capital costs through the monthly depreciation
9 of its 2012 Plan projects included in the calculation of Total E(m) in its
10 monthly ES filings during the period under review.

11 **Q. Did Big Rivers earn a rate of return on any capital expenditures**
12 **through its ES mechanism during the period under review?**

13 A. Yes. Pursuant to the Commission's October 1, 2012 Order, in Case No. 2012-
14 00063, Big Rivers' earned a rate of return on its Environmental Compliance
15 Rate Base (calculated on Form 2.00 of its monthly ES filing) equal to its
16 monthly weighted average cost of debt plus the application of a Times
17 Interest Earned Ratio (TIER) of 1.24. Detailed calculations of Big Rivers'
18 monthly Rates of Return on Environmental Compliance Rate Base, for the
19 six-month period under review are provided in Big Rivers' response to Item
20 4 of Staff's First Request.

21 **Q. What Base Environmental Surcharge Factor (BESF) cost did Big**
22 **Rivers use during the review period?**

1 A. Big Rivers had no environmental surcharge related costs included in its base
2 rates during the review period (*i.e.*, Big Rivers BESF during the period under
3 review was 0.000000%).

4 **Q. Have the Members' pass-through mechanisms been accurately**
5 **compiled, and are they operating as intended?**

6 A. The Members believe their pass-through mechanisms have been accurately
7 compiled and are operating as intended.

8 **Q. Were the amounts charged under Big Rivers' ES mechanism during**
9 **the review period just and reasonable?**

10 A. Yes.

11 **Q. Were the amounts charged under the Members' pass-through**
12 **mechanisms during the review period just and reasonable?**

13 A. The Members believe the amounts charged under their pass-through
14 mechanisms are just and reasonable.

15 **Q. Do Big Rivers and its Members have additional over- or under-**
16 **recovery amounts they believe need to be recognized?**

17 A. No. Big Rivers and its Members are not requesting any additional over- or
18 under-recovery amounts. The normal over-/under-recovery carry-forward
19 element of Big Rivers' ES mechanism is operating as intended.

20 **Q. Does this conclude your testimony?**

21 A. Yes, it does.

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 JANUARY 31, 2018,
AND THE PASS THROUGH MECHANISM
OF ITS THREE MEMBER DISTRIBUTION COOPERATIVES
CASE NO. 2018-00163

VERIFICATION

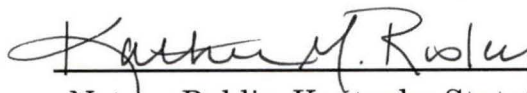
I, Nicholas R. (Nick) Castlen, verify, state, and affirm that I prepared or supervised the preparation of the Direct Testimony filed with this Verification, and that Direct Testimony is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Nicholas R. (Nick) Castlen

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Nicholas R. (Nick) Castlen on this the 7th day of July, 2018.



Notary Public, Kentucky State at Large

My Commission Expires 10-31-2020



ORIGINAL



Your Touchstone Energy® Cooperative 

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)
JANUARY 31, 2018 AND THE PASS)
THROUGH MECHANISM OF ITS THREE)
MEMBER DISTRIBUTION COOPERATIVES)**

**Case No.
2018-00163**

**Responses to Commission Staff's
First Request for Information
dated June 13, 2018**

FILED: July 6, 2018

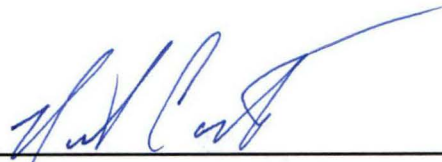
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BIG RIVERS ELECTRIC CORPORATION

**AN EXAMINATION BY THE PUBLIC SERVICE COMMISSION
OF THE ENVIRONMENTAL SURCHARGE MECHANISM
OF BIG RIVERS ELECTRIC CORPORATION
FOR THE SIX-MONTH BILLING PERIOD ENDING JANUARY 31, 2018,
AND THE PASS THROUGH MECHANISM
OF ITS THREE MEMBER DISTRIBUTION COOPERATIVES
CASE NO. 2018-00163**

VERIFICATION

I, Nicholas R. (Nick) Castlen, 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.



Nicholas R. (Nick) Castlen

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Nicholas R. (Nick) Castlen on
this the 3rd day of July, 2018.



Notary Public, Kentucky State at Large

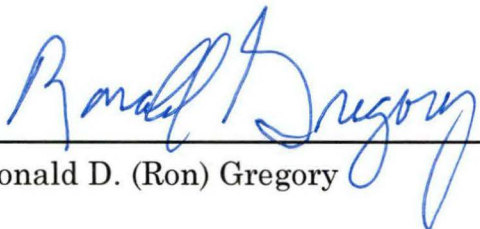
My Commission Expires 10-31-2020



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 JANUARY 31, 2018,
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CASE NO. 2018-00163

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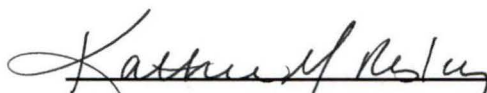
I, Ronald D. (Ron) Gregory, verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Ronald D. (Ron) Gregory

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Ronald D. (Ron) Gregory on this
the 3rd day of July, 2018.



Notary Public, Kentucky State at Large
My Commission Expires 10-31-2020



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 JANUARY 31, 2018,
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VERIFICATION

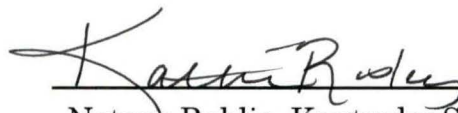
I, Roger D. Hickman, verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Roger D. Hickman

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

3rd SUBSCRIBED AND SWORN TO before me by Roger D. Hickman on this the
day of July, 2018.



Notary Public, Kentucky State at Large
My Commission Expires 10.31.2020



BIG RIVERS ELECTRIC CORPORATION
AN EXAMINATION BY THE PUBLIC SERVICE COMMISSION
OF THE ENVIRONMENTAL SURCHARGE MECHANISM
OF BIG RIVERS ELECTRIC CORPORATION
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OF ITS THREE MEMBER DISTRIBUTION COOPERATIVES
CASE NO. 2018-00163

Response to Commission Staff's
First Request for Information
dated June 13, 2018

July 6, 2018

1 **Item 1)** *Prepare a summary schedule showing the calculation of $E(m)$*
2 *and the surcharge factor for the expense months covered by the billing*
3 *period under review. Form 1.1 can be used as a model for this summary.*
4 *Include the two expense months subsequent to the billing period in order to*
5 *show the over- and under-recovery adjustments for the months included for*
6 *the billing period. Include a calculation of any additional over- or under-*
7 *recovery amount Big Rivers believes needs to be recognized for the billing*
8 *period under review. Provide all supporting calculations and*
9 *documentation in Excel spreadsheet format with formulas intact and*
10 *unprotected and all rows and columns fully accessible.*

11

12 **Response)** Please see the attached schedule, in the format of Form 1.10, covering
13 each of the expense months from June 2017 through January 2018 (i.e., the expense
14 months covered by the billing periods under review plus the two expense months
15 subsequent to the billing periods).

16 All supporting calculations and documentation are also provided in
17 Excel spreadsheet format with formulas intact and unprotected and all rows and
18 columns fully accessible, on the CD accompanying these responses.

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 JANUARY 31, 2017,
AND THE PASS THROUGH MECHANISM
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CASE NO. 2018-00163

Response to Commission Staff's
First Request for Information
dated June 13, 2018

July 6, 2018

1 No additional over- or under-recovery is being requested by Big Rivers
2 for the billing periods under review.

3

4

5 **Witness)** Nicholas R. Castlen

6

Big Rivers Electric Corporation
Case No. 2018-00163
Calculation of Total E(m) and Jurisdictional Surcharge Billing Factor
For the Expense Months: June 2017 to January 2018

	Jun-2017	Jul-2017	Aug-2017	Sep-2017
Calculation of Total E(m)				
E(m) = OE - BAS + RORB, where				
OE = Pollution Control Operating Expenses				
BAS = Total Proceeds from By-Product and Allowance Sales				
RORB = [(RB/12) x (RORORB)]				
OE	\$ 2,497,522	\$ 2,387,138	\$ 1,650,502	\$ 2,240,221
BAS	\$ -	\$ -	\$ -	\$ -
RORB	\$ 149,049	\$ 147,908	\$ 148,015	\$ 148,237
E(m)	\$ 2,646,571	\$ 2,535,046	\$ 1,798,517	\$ 2,388,458
Calculation of Jurisdictional Environmental Surcharge Billing Factor				
Jurisdictional Allocation Ratio for the Month	73.130293%	68.791702%	71.438476%	70.700380%
Jurisdictional E(m) = E(m) x Jurisdictional Allocation Ratio	\$ 1,935,445	\$ 1,743,901	\$ 1,284,833	\$ 1,688,649
Adjustment for (Over)/Under Recovery	\$ 104,686	\$ (112,231)	\$ (412,314)	\$ (146,896)
Prior Period Adjustment (if necessary)	\$ -	\$ -	\$ -	\$ -
Net Jurisdictional E(m) = Jurisdictional E(m) plus (Over)/Under plus Prior Period Adjustment(s)	\$ 2,040,131	\$ 1,631,670	\$ 872,519	\$ 1,541,753
R(m) = Average Monthly Member System Revenue for the 12 Months Ending with the Current Expense Month	\$ 18,759,664	\$ 18,970,063	\$ 19,016,324	\$ 18,923,281
Jurisdictional Environmental Surcharge Billing Factor: CESF: E(m) / R(m); as a % of Revenue	10.875093%	8.601289%	4.588263%	8.147387%

Case No. 2018-00163

Attachment for Response to Staff's First Request Item 1

Witness: Nicholas R. Castlen

Page 1 of 2

Big Rivers Electric Corporation
Case No. 2018-00163
Calculation of Total E(m) and Jurisdictional Surcharge Billing Factor
For the Expense Months: June 2017 to January 2018

	Oct-2017	Nov-2017	Dec-2017	Jan-2018
Calculation of Total E(m)				
E(m) = OE - BAS + RORB, where				
OE = Pollution Control Operating Expenses				
BAS = Total Proceeds from By-Product and Allowance Sales				
RORB = [(RB/12) x (RORORB)]				
OE	\$ 2,479,816	\$ 2,377,315	\$ 2,158,740	\$ 2,594,076
BAS	\$ -	\$ -	\$ -	\$ -
RORB	\$ 146,969	\$ 147,248	\$ 146,030	\$ 145,857
E(m)	\$ 2,626,785	\$ 2,524,563	\$ 2,304,770	\$ 2,739,933
Calculation of Jurisdictional Environmental Surcharge Billing Factor				
Jurisdictional Allocation Ratio for the Month	60.704496%	64.656917%	68.059737%	71.573300%
Jurisdictional E(m) = E(m) x Jurisdictional Allocation Ratio	\$ 1,594,577	\$ 1,632,305	\$ 1,568,620	\$ 1,961,060
Adjustment for (Over)/Under Recovery	\$ 377	\$ 147,903	\$ 87,603	\$ (237,713)
Prior Period Adjustment (if necessary)	\$ -	\$ -	\$ -	\$ -
Net Jurisdictional E(m) = Jurisdictional E(m) plus (Over)/Under plus Prior Period Adjustment(s)	\$ 1,594,954	\$ 1,780,208	\$ 1,656,223	\$ 1,723,347
R(m) = Average Monthly Member System Revenue for the 12 Months Ending with the Current Expense Month	\$ 19,005,182	\$ 19,047,334	\$ 19,070,246	\$ 19,336,142
Jurisdictional Environmental Surcharge Billing Factor:				
CESF: E(m) / R(m); as a % of Revenue	8.392206%	9.346232%	8.684854%	8.912569%

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CASE NO. 2018-00163

Response to Commission Staff's
First Request for Information
dated June 13, 2018

July 6, 2018

1 **Item 2)** *For each of the three Member Cooperatives, prepare a summary*
2 *schedule showing the Member Cooperative's pass-through revenue*
3 *requirement for the months corresponding with the billing period under*
4 *review. Include the two months subsequent to the billing period included*
5 *in the review period. Include a calculation of any additional over- or*
6 *under-recovery amount the Member Cooperative believes needs to be*
7 *recognized for the billing period under review. Provide all supporting*
8 *calculations and documentation in Excel spreadsheet format with*
9 *formulas intact and unprotected and all rows and columns fully accessible.*

10
11 **Response)** The following five sets of schedules listed below, and attached to this
12 response, reflect the Member Cooperatives' environmental surcharge pass-through
13 revenue requirements for the months corresponding to Big Rivers' expense months
14 of June 2017 through January 2018, applied to Big Rivers' Members' invoices for
15 the service months of July 2017 through February 2018, which Big Rivers billed to
16 its Members during the months of August 2017 through March 2018 (i.e., the
17 months corresponding to the six-month review plus the two subsequent months).

- 18
19 • Attachment 1 – Jackson Purchase Energy Corporation Non-Dedicated
20 Delivery Point Customers;

BIG RIVERS ELECTRIC CORPORATION
AN EXAMINATION BY THE PUBLIC SERVICE COMMISSION
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Response to Commission Staff's
First Request for Information
dated June 13, 2018

July 6, 2018

- 1 • Attachment 2 – Kenergy Corp. Non-Dedicated Delivery Point Customers;
- 2 • Attachment 3 – Meade County Rural Electric Cooperative Corporation Non-
- 3 Dedicated Delivery Point Customers;
- 4 • Attachment 4 – Jackson Purchase Energy Corporation Dedicated Delivery
- 5 Point Customers; and
- 6 • Attachment 5 – Kenergy Corp. Dedicated Delivery Point Customers.

7
8 Note: Meade County Rural Electric Cooperative Corporation has no dedicated
9 delivery point customers.

10 As illustrated in the attached schedules, there is a one-month billing
11 lag for the Members' non-dedicated delivery point customers and no billing lag for
12 the Members' dedicated delivery point customers.

13 The information in the attached schedules was obtained from the
14 Members' monthly Environmental Surcharge Schedules provided by Big Rivers'
15 Members. Other than the on-going cumulative over-/under-recovery mechanism,
16 no additional over-/under-recovery amounts are being requested by the Members
17 for the billing periods under review.

18 All supporting calculations and documentation are provided in Excel
19 spreadsheet format, with formulas intact and unprotected and all rows and columns
20 fully accessible, on the CD accompanying these responses.

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AN EXAMINATION BY THE PUBLIC SERVICE COMMISSION
OF THE ENVIRONMENTAL SURCHARGE MECHANISM
OF BIG RIVERS ELECTRIC CORPORATION
FOR THE SIX-MONTH BILLING PERIOD ENDING JANUARY 31, 2017,
AND THE PASS THROUGH MECHANISM
OF ITS THREE MEMBER DISTRIBUTION COOPERATIVES
CASE NO. 2018-00163

Response to Commission Staff's
First Request for Information
dated June 13, 2018

July 6, 2018

1
2
3
4

Witness) Nicholas R. Castlen

Big Rivers Electric Corporation
Six-Month Environmental Surcharge Review (Case No. 2018-00163)

JACKSON PURCHASE ENERGY CORPORATION (Jackson Purchase)
NON-DEDICATED DELIVERY POINT CUSTOMERS

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Big Rivers' Expense Month	Big Rivers' ES Factor Based on Expense Month	Big Rivers' Service Month	Month Billed by Big Rivers	Big Rivers' Invoice ES Amount for the Service Month	Month Billed by JPEC	ES Amount Billed to JPEC's Customers (Line 11 per Filing)	JPEC's (Over)/Under Recovery [from (j)]	JPEC's Total Recoverable [(e) + (h)]	JPEC's (Over)/Under Recovery [(i) for 3rd preceding month less (g) for current month]
Jun-17	10.875093%	Jul-17	Aug-17	\$ 579,585.24	Sep-17	\$ 414,021.18	\$ (81,697.22)	\$ 497,888.02	\$ (81,697.22)
Jul-17	8.601289%	Aug-17	Sep-17	\$ 401,720.58	Oct-17	\$ 404,567.69	\$ (105,053.49)	\$ 296,667.09	\$ (105,053.49)
Aug-17	4.588263%	Sep-17	Oct-17	\$ 190,989.90	Nov-17	\$ 500,928.02	\$ (45,923.62)	\$ 145,066.28	\$ (45,923.62)
Sep-17	8.147387%	Oct-17	Nov-17	\$ 283,083.86	Dec-17	\$ 385,929.36	\$ 111,958.66	\$ 395,042.52	\$ 111,958.66
Oct-17	8.392206%	Nov-17	Dec-17	\$ 306,514.35	Jan-18	\$ 254,646.28	\$ 42,020.81	\$ 348,535.16	\$ 42,020.81
Nov-17	9.346232%	Dec-17	Jan-18	\$ 438,370.51	Feb-18	\$ 122,079.41	\$ 22,986.87	\$ 461,357.38	\$ 22,986.87
Dec-17	8.684854%	Jan-18	Feb-18	\$ 464,677.15	Mar-18	\$ 440,509.00	\$ (45,466.48)	\$ 419,210.67	\$ (45,466.48)
Jan-18	8.912569%	Feb-18	Mar-18	\$ 362,494.38	Apr-18	\$ 535,576.57	\$ (187,041.41)	\$ 175,452.97	\$ (187,041.41)

Case No. 2018-00163

Attachment (1 of 5) for Response to Staff's First Request Item 2

Witness: Nicholas R. Castlen

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Big Rivers Electric Corporation
Six-Month Environmental Surcharge Review (Case No. 2018-00163)

KENERGY CORP.									
NON-DEDICATED DELIVERY POINT CUSTOMERS									
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Big Rivers' Expense Month	Big Rivers' ES Factor Based on Expense Month	Big Rivers' Service Month	Month Billed by Big Rivers	Big Rivers' Invoice ES Amount for the Service Month	Month Billed by Kenergy	ES Amount Billed to Kenergy's Customers (Line 11 per Filing)	Kenergy's (Over)/Under Recovery [from (j)]	Kenergy's Total Recoverable [(e) + (h)]	Kenergy's (Over)/Under Recovery [(i) for 2nd preceding month less (g) for current month]
Jun-17	10.875093%	Jul-17	Aug-17	\$ 1,014,987.58	Sep-17	\$ 680,618.94	\$ (149,927.03)	\$ 865,060.55	\$ (149,927.03)
Jul-17	8.601289%	Aug-17	Sep-17	\$ 714,573.60	Oct-17	\$ 846,075.29	\$ (126,675.95)	\$ 587,897.65	\$ (126,675.95)
Aug-17	4.588263%	Sep-17	Oct-17	\$ 345,251.06	Nov-17	\$ 730,042.47	\$ 135,018.08	\$ 480,269.14	\$ 135,018.08
Sep-17	8.147387%	Oct-17	Nov-17	\$ 529,459.27	Dec-17	\$ 510,826.95	\$ 77,070.70	\$ 606,529.97	\$ 77,070.70
Oct-17	8.392206%	Nov-17	Dec-17	\$ 559,666.16	Jan-18	\$ 433,572.84	\$ 46,696.30	\$ 606,362.46	\$ 46,696.30
Nov-17	9.346232%	Dec-17	Jan-18	\$ 798,875.66	Feb-18	\$ 655,275.31	\$ (48,745.34)	\$ 750,130.32	\$ (48,745.34)
Dec-17	8.684854%	Jan-18	Feb-18	\$ 855,558.96	Mar-18	\$ 837,103.06	\$ (230,740.60)	\$ 624,818.36	\$ (230,740.60)
Jan-18	8.912569%	Feb-18	Mar-18	\$ 666,812.69	Apr-18	\$ 746,233.36	\$ 3,896.96	\$ 670,709.65	\$ 3,896.96

Case No. 2018-00163

Attachment (2 of 5) for Response to Staff's First Request Item 2

Witness: Nicholas R. Castlen

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Big Rivers Electric Corporation
Six-Month Environmental Surcharge Review (Case No. 2018-00163)

MEADE COUNTY RURAL ELECTRIC COOPERATIVE CORPORATION (MCRECC)									
NON-DEDICATED DELIVERY POINT CUSTOMERS									
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Big Rivers' Expense Month	Big Rivers' ES Factor Based on Expense Month	Big Rivers' Service Month	Month Billed by Big Rivers	Big Rivers' Invoice ES Amount for the Service Month	Month Billed by MCRECC	ES Amount Billed to MCRECC's Customers (Line 11 per Filing)	MCRECC's (Over)/Under Recovery [from (j)]	MCRECC's Total Recoverable [(e) + (h)]	MCRECC's (Over)/Under Recovery [(i) for 1st preceding month less (g) for current month]
Jun-17	10.875093%	Jul-17	Aug-17	\$ 371,196.10	Sep-17	\$ 299,468.40	\$ (40,486.44)	\$ 330,709.66	\$ (40,486.44)
Jul-17	8.601289%	Aug-17	Sep-17	\$ 260,586.21	Oct-17	\$ 297,171.11	\$ 33,538.55	\$ 294,124.76	\$ 33,538.55
Aug-17	4.588263%	Sep-17	Oct-17	\$ 122,542.77	Nov-17	\$ 245,543.06	\$ 48,581.70	\$ 171,124.47	\$ 48,581.70
Sep-17	8.147387%	Oct-17	Nov-17	\$ 194,911.13	Dec-17	\$ 168,920.48	\$ 2,203.99	\$ 197,115.12	\$ 2,203.99
Oct-17	8.392206%	Nov-17	Dec-17	\$ 249,380.42	Jan-18	\$ 237,135.24	\$ (40,020.12)	\$ 209,360.30	\$ (40,020.12)
Nov-17	9.346232%	Dec-17	Jan-18	\$ 361,579.38	Feb-18	\$ 276,860.19	\$ (67,499.89)	\$ 294,079.49	\$ (67,499.89)
Dec-17	8.684854%	Jan-18	Feb-18	\$ 408,742.59	Mar-18	\$ 345,056.56	\$ (50,977.07)	\$ 357,765.52	\$ (50,977.07)
Jan-18	8.912569%	Feb-18	Mar-18	\$ 300,816.32	Apr-18	\$ 256,702.39	\$ 101,063.13	\$ 401,879.45	\$ 101,063.13

Case No. 2018-00163

Attachment (3 of 5) for Response to Staff's First Request Item 2

Witness: Nicholas R. Castlen

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Big Rivers Electric Corporation
Six-Month Environmental Surcharge Review (Case No. 2018-00163)

JACKSON PURCHASE ENERGY CORPORATION (Jackson Purchase)							
DEDICATED DELIVERY POINT CUSTOMERS							
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Big Rivers' Expense Month	Big Rivers' ES Factor Based on Expense Month	Big Rivers' Service Month	Month Billed by Big Rivers	Big Rivers' Invoice ES Amount for the Service Month	Month Billed by JPEC	ES Amount Billed to JPEC's Customers	JPEC's Monthly (Over)/Under Recovery [column (e) less column (g)]
Jun-17	10.875093%	Jul-17	Aug-17	\$ 6,127.43	Aug-17	\$ 6,127.43	\$ -
Jul-17	8.601289%	Aug-17	Sep-17	\$ 3,166.12	Sep-17	\$ 3,166.12	\$ -
Aug-17	4.588263%	Sep-17	Oct-17	\$ 1,572.74	Oct-17	\$ 1,572.74	\$ -
Sep-17	8.147387%	Oct-17	Nov-17	\$ 1,997.50	Nov-17	\$ 1,997.50	\$ -
Oct-17	8.392206%	Nov-17	Dec-17	\$ 2,324.15	Dec-17	\$ 2,324.15	\$ -
Nov-17	9.346232%	Dec-17	Jan-18	\$ 2,113.22	Jan-18	\$ 2,113.22	\$ -
Dec-17	8.684854%	Jan-18	Feb-18	\$ 1,820.86	Feb-18	\$ 1,820.86	\$ -
Jan-18	8.912569%	Feb-18	Mar-18	\$ 2,071.43	Mar-18	\$ 2,071.43	\$ -

Case No. 2018-00163

Attachment (4 of 5) for Response to Staff's First Request Item 2

Witness: Nicholas R. Castlen

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Big Rivers Electric Corporation
Six-Month Environmental Surcharge Review (Case No. 2018-00163)

KENERGY CORP.							
DEDICATED DELIVERY POINT CUSTOMERS							
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Big Rivers' Expense Month	Big Rivers' ES Factor Based on Expense Month	Big Rivers' Service Month	Month Billed by Big Rivers	Big Rivers' Invoice ES Amount for the Service Month	Month Billed by Kenergy	ES Amount Billed to Kenergy's Customers	Kenergy's Monthly (Over)/Under Recovery [column (e) less column (g)]
Jun-17	10.875093%	Jul-17	Aug-17	\$ 480,548.29	Aug-17	\$ 480,548.29	\$ -
Jul-17	8.601289%	Aug-17	Sep-17	\$ 398,519.51	Sep-17	\$ 398,519.51	\$ -
Aug-17	4.588263%	Sep-17	Oct-17	\$ 211,785.15	Oct-17	\$ 211,785.15	\$ -
Sep-17	8.147387%	Oct-17	Nov-17	\$ 384,397.79	Nov-17	\$ 384,397.79	\$ -
Oct-17	8.392206%	Nov-17	Dec-17	\$ 389,465.55	Dec-17	\$ 389,465.55	\$ -
Nov-17	9.346232%	Dec-17	Jan-18	\$ 416,982.07	Jan-18	\$ 416,982.07	\$ -
Dec-17	8.684854%	Jan-18	Feb-18	\$ 395,529.86	Feb-18	\$ 395,529.86	\$ -
Jan-18	8.912569%	Feb-18	Mar-18	\$ 396,303.25	Mar-18	\$ 396,303.25	\$ -

Case No. 2018-00163

Attachment (5 of 5) for Response to Staff's First Request Item 2

Witness: Nicholas R. Castlen

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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 JANUARY 31, 2017,
AND THE PASS THROUGH MECHANISM
OF ITS THREE MEMBER DISTRIBUTION COOPERATIVES
CASE NO. 2018-00163

Response to Commission Staff's
First Request for Information
dated June 13, 2018

July 6, 2018

1 **Item 3)** *Refer to Form 2.5, Operating and Maintenance Expenses, for*
2 *each of the expense months covered by each billing period under review.*
3 *For each of the expense line items listed on this schedule, explain the*
4 *reason(s) for any change in the expense levels from month to month if that*
5 *change is greater than plus or minus 10 percent.*

6

7 **Response)** Please see the attachment to this response for the monthly
8 Operating and Maintenance ("O&M") expenses from Form 2.50 and the requested
9 variance explanations for the six-month review period.

10

11

12 **Witnesses)** Nicholas R. Castlen (*Schedules of O&M Expenses*) and
13 Ronald D. Gregory (*Reason(s) for Changes in Expense Levels*)

14

Big Rivers Electric Corporation
Case No. 2018-00163
Form 2.50 - Operating and Maintenance Expense Analysis

NOx Plan:

Expense Month	May-17	Jun-17	Jun-17 vs. May-17 % Change	Jul-17	Jul-17 vs. Jun-17 % Change	Aug-17	Aug-17 vs. Jul-17 % Change	Sep-17	Sep-17 vs. Aug-17 % Change	Oct-17	Oct-17 vs. Sep-17 % Change	Nov-17	Nov-17 vs. Oct-17 % Change
NOx Plan													
Anhydrous Ammonia	\$ 74,871	\$ 73,823	-1%	\$ 46,828	-37%	\$ 45,659	-2%	\$ 25,341	-44%	\$ 33,079	31%	\$ 40,291	22%
Emulsified sulfur for NOx	-	-	Note 1	-	Note 1	-	Note 1	-	Note 1	-	Note 1	-	Note 1
Total NOx Plan O&M Expenses	\$ 74,871	\$ 73,823	-1%	\$ 46,828	-37%	\$ 45,659	-2%	\$ 25,341	-44%	\$ 33,079	31%	\$ 40,291	22%

SO2 Plan:

Expense Month	May-17	Jun-17	Jun-17 vs. May-17 % Change	Jul-17	Jul-17 vs. Jun-17 % Change	Aug-17	Aug-17 vs. Jul-17 % Change	Sep-17	Sep-17 vs. Aug-17 % Change	Oct-17	Oct-17 vs. Sep-17 % Change	Nov-17	Nov-17 vs. Oct-17 % Change
SO2 Plan Expenses:													
(Note 2)	\$ 561,983	\$ 514,087	-9%	\$ 539,140	5%	\$ 40,064	-93%	\$ 601,294	1401%	\$ 572,836	-5%	\$ 554,576	-3%
Fixation Lime	112,145	115,221	3%	94,118	-18%	87,661	-7%	93,459	7%	152,042	63%	159,494	5%
Reagent-Limestone	159,505	97,983	-39%	150,365	53%	166,751	11%	99,456	-40%	176,523	77%	151,839	-14%
Reagent-Lime	878,776	997,588	14%	902,768	-10%	540,341	-40%	612,749	13%	829,794	35%	757,196	-9%
Emulsified sulfur for SO2	6,276	12,775	104%	9,637	-25%	9,439	-2%	6,471	-31%	12,244	89%	2,966	-76%
Reagent-DiBasic Acid	88,518	59,002	-33%	72,040	22%	88,766	23%	74,363	-16%	102,918	38%	115,714	12%
Reagent-Sodium Bisulfite for SO2	30,444	15,676	-49%	26,221	67%	25,912	-1%	30,581	18%	31,059	2%	26,261	-15%
Total SO2 Plan O&M Expenses	\$ 1,837,647	\$ 1,812,332	-1%	\$ 1,794,289	-1%	\$ 958,934	-47%	\$ 1,518,373	58%	\$ 1,877,416	24%	\$ 1,768,046	-6%

Big Rivers Electric Corporation
Case No. 2018-00163
Form 2.50 - Operating and Maintenance Expense Analysis

SO3 Plan:

Expense Month	May-17	Jun-17	Jun-17 vs. May-17 % Change	Jul-17	Jul-17 vs. Jun-17 % Change	Aug-17	Aug-17 vs. Jul-17 % Change	Sep-17	Sep-17 vs. Aug-17 % Change	Oct-17	Oct-17 vs. Sep-17 % Change	Nov-17	Nov-17 vs. Oct-17 % Change
SO3 Plan Expenses:													
Hydrated Lime - SO3	\$ -	\$ -	Note 1	\$ -	Note 1	\$ -	Note 1	\$ -	Note 1	\$ -	Note 1	\$ -	Note 1
Total SO3 Plan O&M Expenses	\$ -	\$ -	Note 1	\$ -	Note 1	\$ -	Note 1	\$ -	Note 1	\$ -	Note 1	\$ -	Note 1

2012 Plan:

Expense Month	May-17	Jun-17	Jun-17 vs. May-17 % Change	Jul-17	Jul-17 vs. Jun-17 % Change	Aug-17	Aug-17 vs. Jul-17 % Change	Sep-17	Sep-17 vs. Aug-17 % Change	Oct-17	Oct-17 vs. Sep-17 % Change	Nov-17	Nov-17 vs. Oct-17 % Change
2012 Plan Expenses:													
Project 9 - Wilson Hg	\$ 87,458	\$ 58,138	-34%	\$ 76,732	32%	\$ 83,423	9%	\$ 61,785	-26%	\$ 61,612	0%	\$ 145,721	137%
Project 10 - Green Hg	418,500	478,291	14%	387,710	-19%	465,262	20%	527,893	13%	454,506	-14%	340,107	-25%
Project 11 - HMP&L Hg	2,253	11,575	414%	18,109	56%	34,302	89%	44,004	28%	(9,696)	-122%	20,249	309%
Total 2012 Plan	\$ 508,211	\$ 548,004	8%	\$ 482,551	-12%	\$ 582,987	21%	\$ 633,682	9%	\$ 506,422	-20%	\$ 506,077	0%
Total	\$ 2,420,729	\$ 2,434,159		\$ 2,323,668		\$ 1,587,580		\$ 2,177,396		\$ 2,416,917		\$ 2,314,414	

Note 1: Percentage change not calculated because the cost incurred during the prior expense month was \$0.

Note 2: The monthly totals for Disposal Bottom Ash, Disposal Flyash and Disposal Flyash/Bottom Ash/Sludge have been consolidated due to similarity to better facilitate comparability.

Big Rivers Electric Corporation
Case No. 2018-00163
Form 2.50 - Operating and Maintenance Expense Analysis

Variance Explanations:

Anhydrous Ammonia:

Jul-17 vs. Jun-17	-37%	The decrease was due to timing of product delivery and invoicing at Wilson.
Sep-17 vs Aug-17	-44%	The decrease was due to reduced generation at HMP&L and Wilson in September.
Oct-17 vs Sep-17	31%	The increase was due to increased generation at Wilson in October.
Nov-17 vs Oct-17	22%	The increase was due to timing of product deliveries and invoicing at Wilson

Disposal-Flyash/Bottom Ash/Sludge:

Aug-17 vs Jul-17	-93%	The decrease was due to an accounting true-up credit booked in August at HMP&L and due to miscellaneous and 3rd party labor costs that occurred in July at Wilson.
Sep-17 vs Aug-17	1401%	The increase was due to September booking of Ash pond dredging, landfill capping and additional true-up expenses at Green compared to prior month, due to credit booked in August at HMP&L and due to increased landfill cover costs in September at Wilson.

Fixation Lime:

Jul-17 vs. Jun-17	-18%	The decrease was due to reduction in the quantity of fixation lime added at Green from June to July.
Oct-17 vs Sep-17	63%	The increase was due to increase in generation and fuel burn at Green and Wilson and due to variability in quantity of fixation lime added at Wilson.

Reagent-Limestone:

Jun-17 vs. May-17	-39%	The decrease was due to reduced generation in June at Wilson
Jul-17 vs. Jun-17	53%	The increase was due to increased generation in July at Wilson
Aug-17 vs Jul-17	11%	The increase was due to timing of product deliveries and invoicing at Wilson
Sep-17 vs Aug-17	-40%	The decrease was due to reduced generation in September at Wilson
Oct-17 vs Sep-17	77%	The increase was due to increased generation in October at Wilson
Nov-17 vs Oct-17	-14%	The decrease was due to reduced generation in November at Wilson

Big Rivers Electric Corporation
Case No. 2018-00163
Form 2.50 - Operating and Maintenance Expense Analysis

Reagent-Lime:

Jun-17 vs. May-17	14%	The increase was due to increase generation and fuel burn at Green and HMP&L.
Jul-17 vs. Jun-17	-10%	The decrease was due to decreased generation and fuel burn at Green and HMP&L.
Aug-17 vs Jul-17	-40%	The decrease was due to decreased generation and fuel burn at Green and HMP&L.
Sep-17 vs Aug-17	13%	The increase was due to quarterly inventory adjustment and March inventory correction at Green and HMP&L.
Oct-17 vs Sep-17	35%	The increase was due to increase generation and fuel burn at Green.

Emulsified Sulfur for SO₂:

Jun-17 vs. May-17	104%	Emulsified sulfur is ordered on an as needed basis and added in batch based on scrubber chemistry. The increase was due to timing of product delivery and invoicing at HMP&L.
Jul-17 vs. Jun-17	-25%	Emulsified sulfur is ordered on an as needed basis and added in batch based on scrubber chemistry. The decrease was due to timing of product delivery and invoicing at HMP&L.
Sep-17 vs Aug-17	-31%	Emulsified sulfur is ordered on an as needed basis and added in batch based on scrubber chemistry. The decrease was due to timing of product delivery and invoicing at Wilson, along with reduced generation at Wilson in September.
Oct-17 vs Sep-17	89%	Emulsified sulfur is ordered on an as needed basis and added in batch based on scrubber chemistry. The increase was due to timing of product delivery and invoicing and increased generation at Wilson in October.
Nov-17 vs Oct-17	-76%	Emulsified sulfur is ordered on an as needed basis and added in batch based on scrubber chemistry. The decrease was due to timing of product delivery and invoicing at HMP&L and Wilson, along with reduced generation in November.

Reagent-Dibasic Acid:

Jun-17 vs. May-17	-33%	The decrease was due to reduced generation in June at Wilson
Jul-17 vs. Jun-17	22%	The increase was due to increased generation in July at Wilson
Aug-17 vs Jul-17	23%	The increase was due to timing of product deliveries and invoicing at Wilson
Sep-17 vs Aug-17	-16%	The decrease was due to reduced generation in September at Wilson
Oct-17 vs Sep-17	38%	The increase was due to increased generation in October at Wilson
Nov-17 vs Oct-17	12%	The increase was due to timing of product deliveries and invoicing at Wilson

Reagent-Sodium Bisulfite for SO₂:

Jun-17 vs. May-17	-49%	The decrease was due to reduced generation in June at Wilson
Jul-17 vs. Jun-17	67%	The increase was due to increased generation in July at Wilson
Sep-17 vs Aug-17	18%	The increase was due to timing of product deliveries and invoicing at HMP&L
Nov-17 vs Oct-17	-15%	The decrease was due to reduced generation in November at Wilson

Big Rivers Electric Corporation
Case No. 2018-00163
Form 2.50 - Operating and Maintenance Expense Analysis

Project 9 - Wilson Hg

Jun-17 vs. May-17	-34%	The decrease was due to reduced generation in June at Wilson
Jul-17 vs. Jun-17	32%	The increase was due to increased generation in July at Wilson
Sep-17 vs Aug-17	-26%	The decrease was due to reduced generation in September at Wilson
Nov-17 vs Oct-17	137%	The increase was due to charges associated to MATS compliance air testing in November

Project 10 - Green Hg

Jun-17 vs. May-17	14%	The increase was due to timing of product delivery and invoicing and variability in usage of Hydrated Lime and Powder Activated Carbon with operational conditions.
Jul-17 vs. Jun-17	-19%	The increase was due to timing of product delivery and invoicing and variability in usage of Hydrated Lime and Powder Activated Carbon with operational conditions.
Aug-17 vs Jul-17	20%	The increase was due to timing of product delivery and invoicing and variability in usage of Hydrated Lime and Powder Activated Carbon with operational conditions.
Sep-17 vs Aug-17	13%	The increase was due to timing of product delivery and invoicing and variability in usage of Hydrated Lime and Powder Activated Carbon with operational conditions.
Oct-17 vs Sep-17	-14%	The increase was due to timing of product delivery and invoicing and variability in usage of Hydrated Lime and Powder Activated Carbon with operational conditions.
Nov-17 vs Oct-17	-25%	The increase was due to timing of product delivery and invoicing and variability in usage of Hydrated Lime and Powder Activated Carbon with operational conditions.-

Project 11 - HMP&L Hg

Jun-17 vs. May-17	414%	The increase was due to was due to variability in costs for trap analysis or stack testing, which are incurred on as needed basis for compliance monitoring.
Jul-17 vs. Jun-17	56%	The increase was due to was due to variability in costs for trap analysis or stack testing, which are incurred on as needed basis for compliance monitoring.
Aug-17 vs Jul-17	89%	The increase was due to was due to variability in costs for trap analysis or stack testing, which are incurred on as needed basis for compliance monitoring.
Sep-17 vs Aug-17	28%	The increase was due to was due to variability in costs for trap analysis or stack testing, which are incurred on as needed basis for compliance monitoring.
Oct-17 vs Sep-17	-122%	The increase was due to was due to variability in costs for trap analysis or stack testing, which are incurred on as needed basis for compliance monitoring.
Nov-17 vs Oct-17	309%	The increase was due to was due to variability in costs for trap analysis or stack testing, which are incurred on as needed basis for compliance monitoring.

Case No. 2018-00163

Attachment for Response to Staff's First Request Item 3

Witnesses: Nicholas R. Castlen and Ronald D. Gregory

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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 JANUARY 31, 2017,
AND THE PASS THROUGH MECHANISM
OF ITS THREE MEMBER DISTRIBUTION COOPERATIVES
CASE NO. 2018-00163

Response to Commission Staff's
First Request for Information
dated June 13, 2018

July 6, 2018

1 **Item 4)** *Refer to Big Rivers' monthly environmental surcharge reports*
2 *for the expense months in this review period. Provide the calculations and*
3 *supporting data for the rates of return included in each monthly*
4 *environmental surcharge filing. Provide all supporting calculations and*
5 *documentation in Excel spreadsheet format, with formulas intact and*
6 *unprotected and all rows and columns fully accessible.*

7

8 **Response)** Please see the attachment to this response for the calculations and
9 supporting data for the rates of return included in each monthly environmental
10 surcharge filing for the expense months in this review period. These calculations
11 are also provided in Excel spreadsheet format, with formulas intact and unprotected
12 and all rows and columns accessible, on the CD accompanying these responses.

13

14

15 **Witness)** Nicholas R. Castlen

16

Big Rivers Electric Corporation
Case No. 2018-00163
Calculations of Rates of Return on Environmental Compliance Rate Base
For the Expense Months: June 2017 through November 2017

Calculations of Monthly Rates of Return on Environmental Compliance Rate Base

	<u>Jun-17</u>	<u>Jul-17</u>	<u>Aug-17</u>	<u>Sep-17</u>	<u>Oct-17</u>	<u>Nov-17</u>
<u>Month-to-Date Interest Expense on Long-Term Debt:</u>						
RUS - Series A Note	\$ 384,872.14	\$ 397,764.15	\$ 397,770.90	\$ 384,939.57	\$ 382,384.28	\$ 314,254.18
RUS - Series B Note	793,247.16	831,538.88	831,538.88	804,715.04	843,692.44	816,476.56
CoBank - Series 2012A Notes	707,330.44	722,678.38	722,678.38	699,366.17	714,350.91	691,307.33
CFC - Series 2012B Refinance Note	892,987.19	921,603.88	921,651.74	884,806.93	913,434.56	883,257.20
CFC - Series 2012B Equity Note	162,643.20	162,643.20	162,643.21	160,859.07	160,859.07	160,859.07
Series 2010A P.C. Bonds	416,500.00	416,500.00	416,500.00	416,500.00	416,500.00	416,500.00
CFC - Series 2017B Refinance Note	-	-	-	-	10,762.50	46,125.00
(a) Total Monthly Interest Expense on Long-Term Debt	\$ 3,357,580.13	\$ 3,452,728.49	\$ 3,452,783.11	\$ 3,351,186.78	\$ 3,441,983.76	\$ 3,328,779.34
Total Outstanding Long-Term Debt (Beginning of Month)	\$ 809,931,385.00	\$ 810,114,982.05	\$ 810,129,041.18	\$ 806,710,145.13	\$ 806,928,958.93	\$ 806,947,777.62
Total Outstanding Long-Term Debt (End of Month)	810,114,982.05	810,129,041.18	806,710,145.13	806,928,958.93	806,947,777.62	803,497,115.40
(b) Average Outstanding Long-Term Debt during Month	\$ 810,023,183.53	\$ 810,122,011.62	\$ 808,419,593.16	\$ 806,819,552.03	\$ 806,938,368.28	\$ 805,222,446.51
(c) Number of Days During Year	365	365	365	365	365	365
(d) Number of Days During Month	30	31	31	30	31	30
(e) Average Cost of Debt $[(a) \div (b)] \times [(c) \div (d)]$	5.04%	5.02%	5.03%	5.05%	5.02%	5.03%
(f) Applicable TIER ⁽¹⁾	1.24	1.24	1.24	1.24	1.24	1.24
(g) Rate of Return on Environmental Compliance Rate Base $[(e) \times (f)]$	6.25%	6.22%	6.24%	6.26%	6.22%	6.24%

⁽¹⁾ Applicable Times Interest Earned Ratio ("TIER") for calculating the Rate of Return on Environmental Compliance Rate Base per Big Rivers' Environmental Surcharge Tariff approved by Order of the Commission dated October 1, 2012 (Case No. 2012-00063).

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 JANUARY 31, 2017,
AND THE PASS THROUGH MECHANISM
OF ITS THREE MEMBER DISTRIBUTION COOPERATIVES
CASE NO. 2018-00163

Response to Commission Staff's
First Request for Information
dated June 13, 2018

July 6, 2018

1 **Item 5)** *State whether Big Rivers and the Member Cooperatives would*
2 *be amenable to the use of electronic filing procedures for the environmental*
3 *surcharge review cases.*

4

5 **Response)** Big Rivers and its Member Cooperatives are amenable to using
6 electronic filing procedures for the environmental surcharge review cases.

7

8

9 **Witness)** Roger D. Hickman

10