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Skill. Integrity. Efficiency.

October 24, 2016

RECEIVED

OCT 25 2016

PUBLIC SERVICE
COMMISSION

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

Re: *In the Matter of: An Examination of the Application of the
Fuel Adjustment Clause of Big Rivers Electric Corporation
from November 1, 2015 through April 30, 2016*
Case No. 2016-00235

Dear Dr. Mathews:

Enclosed for filing on behalf of Big Rivers Electric Corporation are an original and eight (8) copies of Big Rivers' response to the Public Service Commission Staff's Third 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 by first class mail.

Sincerely,


Tyson Kamuf
Counsel for Big Rivers Electric Corporation

Enclosures

BIG RIVERS ELECTRIC CORPORATION
AN EXAMINATION OF THE APPLICATION
OF THE FUEL ADJUSTMENT CLAUSE
OF BIG RIVERS ELECTRIC CORPORATION
FROM NOVEMBER 1, 2015 THROUGH APRIL 30, 2016
CASE NO. 2016-00235

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 20th day of October, 2016.



Notary Public, Ky. State at Large
My Commission Expires 1-12-17

ORIGINAL



Your Touchstone Energy® Cooperative 

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

In the Matter of:

**AN EXAMINATION OF THE APPLICATION)
OF THE FUEL ADJUSTMENT CLAUSE)
OF BIG RIVERS ELECTRIC CORPORATION)
FROM)
NOVEMBER 1, 2015 THROUGH APRIL 30, 2016)**

**Case No.
2016-00235**

**Responses to Commission Staff's Third Request for Information
dated
October 18, 2016**

FILED: October 25, 2016

ORIGINAL

BIG RIVERS ELECTRIC CORPORATION

**AN EXAMINATION OF THE APPLICATION OF THE FUEL ADJUSTMENT
CLAUSE OF BIG RIVERS ELECTRIC CORPORATION
FROM NOVEMBER 1, 2015 THROUGH APRIL 30, 2016
CASE NO. 2016-00235**

**Response to Commission Staff's Third Request for Information
dated October 18, 2016**

October 25, 2016

1 **Item 1) Refer to Big Rivers' response to Commission Staff's Second**
2 **Request for Information, Item 2. Explain in detail how Big Rivers determines**
3 **the substitute (or replacement) cost of power during a forced outage.**

4
5 **Response) The substitute (or replacement) cost of power during a forced outage**
6 **consists of the cost of substitute power from purchased power and the cost of**
7 **substitute power from generation.**

8
9 The cost of substitute power from purchased power is determined by identifying
10 all power purchases made during the forced outage (to substitute for the lost
11 generation due to the forced outage) and summing the costs of those purchases. For
12 the Green Unit 1 forced outage (G1-16-03), which started February 24, 2016, at 15:02
13 CST and ended February 27, 2016, at 19:15 CST, 6,295.240 MWh were purchased for
14 \$137,232.10 to substitute for the lost generation (i.e. the cost of substitute power from
15 purchased power for G1-16-03 was \$137,232,10).

16
17 The cost of substitute power from generation is calculated as follows:

- 18
19 a. First, the assigned generation (i.e. the MWh that the unit suffering the forced
20 outage could have generated during the forced outage, had the forced outage
21 not occurred) is calculated based on the unit's net generation during the seven
22 most recent days preceding the forced outage, during which time the unit
23 operated under normal conditions.
- 24 i. The sum of the net MWh generated by the unit during those seven days
25 is divided by 168 hours (the number of hours in seven days) to determine

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1 the unit's average net generation per hour under normal operating
2 conditions.

3
4 ii. The unit's average net generation per hour is multiplied by the duration
5 of the forced outage (rounded to the nearest 1/10th of an hour) to
6 determine the assigned generation volume.

7
8 b. The volume (MWh) of substitute power from generation is then calculated by
9 subtracting (1) the volume of substitute power from power purchases from (2)
10 the assigned generation (i.e. Assigned Generation minus Substitute Power
11 from Power Purchases equals Substitute Power from Generation).

12
13 c. The average fuel cost (\$/MWh) of substitute power from generation is
14 calculated by:

15
16 i. Identifying all Big Rivers' other generation units which were available and
17 generating during the forced outage (the "substitute units"), and

18
19 ii. Dividing the sum of the substitute units' current month fuel costs by the
20 sum of the substitute units' current month net generation volume (MWh)
21 (i.e. Sum of Substitute Units' current month fuel costs / Substitute Units'
22 net generation = Average Fuel Cost of Substitute Generation (\$/MWh)).

23
24 d. The cost of substitute power from generation is then calculated by multiplying
25 the volume (MWh) of substitute power from generation (calculated in b. above)

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1 by the average fuel cost (\$/MWh) of substitute generation (calculated in c.
2 above).

3
4 As an example, the detailed calculation of the cost of substitute power from
5 generation for G1-16-03 is provided as an attachment to this response.

6
7 The total substitute (or replacement) cost of power during a forced outage
8 equals the cost of substitute power from purchased power *plus* the cost of
9 substitute power from generation.

10
11 The actual costs recoverable through the FAC are limited to the lesser of (a)
12 the assigned cost¹ and (b) the substitute (or replacement) cost.

13
14 **Witnesses)** Nicholas R. Castlen

¹ See Big Rivers' response to Commission Staff's 2nd Request for Information, Item 2, for an explanation of how the assigned costs during a forced outage are calculated.

Big Rivers Electric Corporation
Case No. 2016-00235
Attachment for Response to Item 1 of Staff's Third Request for Information

Outage Number	Outage Start Date	Outage Start Time	Outage End Date	Outage EndTime	Outage Duration
G1-16-03 (UO2)	2/24/2016	15:02 CST	2/27/2016	19:15 CST	76.2 hours

Green Unit 1 Net Generation During 7 Most Recent Days Preceding Forced Outage with Normal Operating Conditions:

Date	Net MWh
02/17/16	2,983.764
02/18/16	2,757.661
02/19/16	2,691.918
02/20/16	2,836.073
02/21/16	2,946.937
02/22/16	3,389.152
02/23/16	2,872.265
Total	20,477.770

Substitute Power from Generation:

Green Unit 1 Normal 7-Day Net Generation (from above)	20,477.770 MWh
Divided by:	168 hrs. (7 days x 24 hrs.)
Average Net Generation per Hour	121.891 MW
Multiplied by:	76.2 hrs. (duration of forced outage)
Assigned Generation	9,288.131 MWh
Less:	6,295.240 MWh (substitute power from power purchases)
Substitute Power from Generation	2,992.891 MWh

Available Units Generating During Forced Outage:

Substitute Units	Current Month Generation Fuel Cost	Current Month Net Generation (MWh)	Unit Fuel Cost (\$ / MWh)
SII Unit 1	\$ 1,388,928.34	48,541.031	\$ 28.61
SII Unit 2	\$ 1,683,661.78	59,691.199	\$ 28.21
Green Unit 2	\$ 2,952,471.65	123,197.665	\$ 23.97
Wilson	\$ 5,458,012.67	252,169.006	\$ 21.64
	\$ 11,483,074.44	483,598.901	\$ 23.75

Avg. Fuel Cost per MWh of Substitute Generation

Cost of Substitute Power from Generation:

Substitute Power from Generation (MWh)	2,992.891
Weighted Average Cost of Fuel for Substitute Generation (\$/MWh)	\$ 23.75
Cost of Substitute Power from Generation	\$ 71,066.31