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R. Michael Sullivan

Bryan R. Reynolds*

Tyson A. Kamuf

Mark W. Starnes

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*Also Licensed in Indiana

May 26, 2015

Via Federal Express

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

RECEIVED

MAY 27 2015

PUBLIC SERVICE
COMMISSION

Re: **In the Matter of: Application of Big Rivers Electric Corporation
for a Certificate of Public Convenience and Necessity to
Construct Two 161 kV Transmission Lines in Hancock County,
Kentucky, Case No. 2015-00051**

Dear Mr. Derouen:

Enclosed for filing in the above-referenced matter are (i) an original and seven (7) copies of Big Rivers Electric Corporation's responses to the Public Service Commission Staff's first request for information, and (ii) an original and ten (10) copies of a petition for confidential treatment. I certify that on this date, a copy of this letter, a copy of the responses, and a copy of the petition were served on each of the persons listed on the attached service list by first-class mail.

Sincerely,



Tyson Kamuf

TAK/lm
Enclosures

cc. Michael Chambliss
Service List

Telephone (270) 926-4000

Telecopier (270) 683-6694

100 St. Ann Building

PO Box 727

Jwensboro, Kentucky

42302-0727

www.westkylaw.com

Service List
PSC Case No. 2015-00051

Thomas K. Baird
1092 Howards Mill Road
Calhoun, KY 42327

ORIGINAL

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MAY 27 2015

PUBLIC SERVICE
COMMISSION



Your Touchstone Energy® Cooperative 

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

In the Matter of:

APPLICATION OF)
 BIG RIVERS ELECTRIC CORPORATION)
 FOR A CERTIFICATE OF PUBLIC CONVENIENCE)
 AND NECESSITY)
 TO CONSTRUCT TWO 161 KV TRANSMISSION)
 LINES)
 IN HANCOCK COUNTY, KENTUCKY)

Case No.
2015-00051

Responses to Commission Staff's Request for Information
dated
May 15, 2015

FILED: May 27, 2015

ORIGINAL

BIG RIVERS ELECTRIC CORPORATION

**APPLICATION OF BIG RIVERS ELECTRIC CORPORATION
FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY
TO CONSTRUCT TWO 161 KV TRANSMISSION LINES
IN HANCOCK COUNTY, KENTUCKY
CASE NO. 2015-00051**

**Response to Commission Staff's Request for Information
dated May 15, 2015**

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1 **Item 1)** *Refer to the application, paragraph 8, the initial portion.*
2 *Provide the number of jobs that the expansion of the Aleris Rolled*
3 *Products, Inc. ("Aleris") facility is expected to provide.*

4

5 **Response)** Big Rivers has no firsthand knowledge of the number of jobs
6 associated with the Aleris expansion. However, according to a February 2015
7 article from the *Owensboro Messenger & Inquirer* Aleris believes "[t]he
8 expansion....will add about 60 jobs to about 80 already at the current facility." A
9 copy of that article is attached.

10

11

12 **Witness)** Michael W. Chambliss

13

Utility adding lines to Aleris

Posted: Friday, February 20, 2015 12:00 am | Updated: 1:19 am, Fri Feb 20, 2015.

Big Rivers Electric Corporation is proposing to build two, two-mile transmission lines in northern Hancock County that will support the needs of the \$350 million expansion at the Aleris rolling mill plant in Lewisport that was announced last year.

"This expansion is significant enough that it requires this new infrastructure," said Marty Littrel, managing director of communications and community relations. "We were able to handle their load before the expansion. On a smaller scale, it's kind of like having to add a new breaker box in your house when you have an addition."

The transmission lines likely will be constructed using single pole steel structures. Fewer than 10 property owners will be impacted, and Big Rivers sent them letters this week, Littrel said. Landowners are "equitably reimbursed" for the easements, he said.

"No one wants these poles on their property, but with this kind of progress, it is necessary," Littrel said. "This is a very significant project and a big electrical load, with a big impact for Hancock County."

The proposed route for the two 161-kilovolt transmission lines starts at the Big Rivers Coleman EHV (extra high voltage) Substation east of the Aleris Lewisport aluminum mill in northern Hancock County and extends west to two substations at the mill.

"The expansion requires two substations," Littrel said. "One is an existing station that requires an additional transmission line to aid in the Aleris expansion. Plus we had to add a new substation, which requires a transmission line as well to service the additional load requirements."

Aleris is adding a new wide cold mill with two continuous annealing lines and an automotive innovation center.

The expansion ---which will add 60 jobs to about 80 already at the current facility --- is expected to put the company at the forefront of manufacturing auto body sheet metal for the auto industry as it shifts from using steel to aluminum to produce lighter weight and more fuel efficient vehicles.

Big Rivers must first get the Kentucky Public Service Commission to approve a Certificate of Public Convenience and Necessity to authorize the project. The first step in that process is to run a legal notice in the newspaper. After the ad runs, Big Rivers will file the application.

The utility does not have cost estimates to construct the transmission lines yet, but that information will be available when the PSC application is made, Littrel said.

"We will need to get the route approved and then get the engineering done," he said.

Aleris officials said in late October at the groundbreaking on the new mill that they expect to be shipping auto body sheet metal from Lewisport in 2017.

Aleris' spokesperson said Thursday the company is pleased that the transmission lines project is moving forward.

"This is another step forward toward our goal of shipping product to our automotive customers from our expanded Lewisport facility by 2017," said Shannon Bennett. "As you know we broke ground in October, and the construction is on track. This is an exciting project for Aleris, our employees and the entire community."

Littrel said if the transmission lines project is approved, it could take about two years to construct the lines and infrastructure.

Aleris will be the first company to earn Big Rivers' Economic Development Incentive Rate if the project progresses, he said. The utility established this rate to attract and encourage new industry and expansions. For companies with one megawatt or larger loads, it was developed as part of Big Rivers' overall plan to mitigate the impact of losing its largest customers — Century's aluminum smelters in Hawesville and Sebree.

The discount will mean that Aleris will get a 90 percent reduction in the demand charge on the energy from the new lines for four years. The demand charge will be at the standard rate for the other four years on the eight-year term.

"Some companies may say, I don't want to expand because my bill will go up," Littrel said. "This rate encourages them to expand."

Interested parties in this transmission lines project may ask to intervene in the PSC review process to participate in the proceedings. They may also ask for a public hearing in Hancock County on the application. Details of how that works may be directed to the PSC at 502-564-3940.

Questions also may be directed to Big Rivers at 270-827-2561.

Joy Campbell, 270-691-7299, jbcampbell@messenger-inquirer.com

BIG RIVERS ELECTRIC CORPORATION

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1 *Item 2) Refer to the application, paragraph 8, the second portion,*
2 *which provides a list of projects associated with the proposed*
3 *transmission lines that do not require a certificate of public convenience*
4 *and necessity ("CPCN"), but which will enable Big Rivers to serve the*
5 *expansion of the Aleris mill.*

6
7 *a. One of these projects is the construction of a 0.7-mile, 161-*
8 *kilovolt ("kV") transmission line out of Big Rivers' Hancock*
9 *County substation. Which Aleris substation will this*
10 *transmission line connect to?*

11 *b. If the transmission lines proposed in this case were not*
12 *constructed, explain whether it would be necessary for any*
13 *of the identified projects to be undertaken and why.*

14 *c. Provide the cost of each of the non-CPCN projects identified*
15 *in paragraph 8.*

16
17 **Response)**

18 a. The 0.7 mile 161-kV transmission line will connect to the
19 Lewisport Aluminum Mill Substation 2 (LAM-2).

20 b. The Alternative B service plan left the topology unchanged and
21 provided service to the entire Aleris load through an expansion of
22 the existing delivery point. Therefore, modification of the existing
23 substation on the south side of the Aleris mill would be necessary.
24 The construction of a new transmission substation on the north

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1 side of the Aleris mill and construction of a 0.7 mile 161-kV
2 transmission line out of Big Rivers' Hancock County would not be
3 necessary. However, this option did not provide the desired
4 service as requested by Aleris and resulted in unacceptably low
5 transmission voltages. The existing station did not have sufficient
6 space to allow Aleris to install new switchgear and existing plant
7 infrastructure created problems in connecting from the exiting
8 substation and the new load.

9 c. The following is a list of non-CPCN projects along with an a cost
10 estimate for each:

- 11
- 12 1. Construction of a new transmission substation on the north
13 side of the Aleris mill (\$5,800,000);
 - 14 2. Construction of a 0.7 mile 161-kV transmission line out of Big
15 Rivers' Hancock County Substation (\$400,000);
 - 16 3. Modifications to the existing substation on the south side of
17 the Aleris mill (and at Hancock County Substation and
18 switches in the existing lines) (\$800,000);
 - 19 4. Construction of two line terminals at the Coleman EHV
20 Substation (\$1,150,000).
- 21
22

23 **Witness)** Michael W. Chambliss

24

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1 **Item 3)** *Refer to the application, paragraph 12, which references the*
2 *cost of the project and states, "The project does not involve sufficient*
3 *capital outlay to materially affect the existing financial condition of Big*
4 *Rivers."*

5
6 *a. Explain whether Big Rivers will be seeking any*
7 *reimbursement from Aleris for a portion or all of the*
8 *capital cost of the project. If not, explain why.*

9 *b. Provide a detailed cost breakdown of the items that are*
10 *included in the annual operating costs of \$27,000.*

11 *c. The total project cost is estimated to be \$1.4 million. On*
12 *page 96 of the application, Exhibit C, Table 17 shows that*
13 *the combined project cost for the preferred routes B and D*
14 *totals \$2,217,732. Explain and reconcile this discrepancy.*

15
16 **Response)**

17 a. The arrangements with Aleris for capital costs for the projects
18 required to serve its expanded facilities are two-fold. First, Big
19 Rivers, Kenergy and Aleris are still negotiating the retail and
20 wholesale service agreements. But Big Rivers expects that the
21 retail service agreement will contain the same arrangements that
22 are usually contained in retail service agreements where Big
23 Rivers is required to expend funds to extend service from Big
24 Rivers' facilities to the retail delivery point. The customer-specific

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1 fixed costs associated with serving Aleris are currently estimated
2 to be \$9,500,000, but in the end will be the actual cost of those
3 facilities. The actual amount of the customer-specific costs will
4 become a "termination charge." The amount of the termination
5 charge will be reduced by \$0.90 per kilowatt-month purchased
6 and paid for by Aleris during the term of the retail service
7 agreement. If there is a balance on the termination charge when
8 the retail service agreement expires or is otherwise terminated,
9 Aleris will be obligated to pay the remaining balance. Payment of
10 the termination charge will be secured by an irrevocable bank
11 letter of credit.

12 Second, for the period prior to the effective date of the retail
13 and wholesale service agreements, Big Rivers has expense
14 reimbursement agreements with Aleris that make Aleris
15 responsible for 100% of any amounts expended by Big Rivers on
16 customer-specific costs if the retail agreement does not become
17 effective. Big Rivers believes these arrangements respecting
18 customer-specific costs are reasonable, and are consistent with the
19 Public Service Commission's requirements concerning recovery of
20 those costs.

21 b. The annual operating costs were based on a five-year average
22 (2010-2014) of actual Big Rivers operating and maintenance
23 expenses related to transmission lines. This five-year average
24 cost was divided by the actual Big Rivers transmission circuit

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1 miles to create a per-mile average operating and maintenance cost
2 of approximately \$5,490 per mile. This value was multiplied by
3 the new 3.7 circuit-miles. The expected annual property tax for
4 the new circuits was added to this value to determine the total
5 expected annual operating cost.

6 c. The estimates from Table 17 Cost Calculations for Routes B and D
7 when constructed separately would be expected to total about
8 \$2,200,000. Big Rivers believes that with the proposed plan to
9 construct much of the two lines as a double-circuit on shared
10 right-of-way, the expected cost would be much less than as
11 reported in Table 17.

12
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14
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Witness) Michael W. Chambliss

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1 **Item 4)** *Refer to the application, paragraph 20, which provides the*
2 *estimated total cost of the proposed transmission lines, including the costs*
3 *associated with the necessary easements. Provide a detailed, tabulated*
4 *cost estimate for the proposed transmission facilities.*

5

6 **Response)** Paragraph 12 of the application provides the estimated total cost of
7 the proposed transmission lines. Big Rivers estimated this project based on
8 historical averages of per-mile costs for 161-kV transmission line projects. Using
9 \$400,000 per mile multiplied by 3.6 miles is \$1,440,000.

10

11

12

13 **Witness)** Michael W. Chambliss

14

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1 *Item 5) Refer to the application, Exhibit B, Aleris Transmission*
2 *Service Plan, page 1, Introduction and Executive Summary. Given that*
3 *Big Rivers currently serves the existing 28-megawatt ("MW") Aleris load*
4 *through its existing 161-kV system, explain why it is necessary to construct*
5 *a new 1.7-mile, 161-kV circuit to serve the existing load.*

6
7 **Response)** The current 161-kV lines and substation are insufficient to serve both
8 the existing load and the new load. Since new facilities are necessary, Aleris has
9 requested Big Rivers build a second substation to facilitate the expansion of the
10 plant rather than expand the existing substation which is land-locked and
11 surrounded by existing infrastructure. Redundant transmission service is
12 provided to the existing Aleris load through two 161-kV transmission sources.
13 With the addition of the new substation that is required to meet Aleris' service
14 needs, a service plan that provides future service comparable to the existing
15 service was developed. The proposed service plan utilizes both existing 161-kV
16 circuits and two new 161-kV circuits, including the 1.7 mile 161-kV circuit, to
17 provide a primary and back-up 161-kV source to the existing and new substations.
18 One of the existing 161-kV lines will be rerouted to the new substation to provide
19 backup power, and one of the new lines will provide service to the new station.
20 The remaining existing 161-kV line will continue to provide backup power to the
21 existing substation, and the other new 161-kV line will provide power to the
22 existing substation.

23 Overall, this proposed service plan was found to be the most robust
24 option and allows the largest individual customer on the Big Rivers system to be

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1 served from a modern EHV substation with a "breaker and a half" configuration to
2 provide maximum reliability. This service plan also results in improved system
3 voltages and reduced line loadings. During an outage of the Reid to Daviess
4 County 161-kV circuit, moving the existing load to Coleman EHV results in a
5 voltage increase from 152.5 kV to 153.1 kV at Newman, and the Coleman EHV to
6 Hancock County 161-kV circuit loading is reduced from 210 MVA (80%) to 182
7 MVA (69%). During an outage of the Coleman EHV to Hancock County 161-kV
8 circuit, moving the existing Aleris load to Coleman EHV results in a voltage
9 increase from 155.3 kV to 161.3 kV at the Hancock County substation. The
10 voltage increase and line loading reduction has the potential to benefit other
11 customers sourced in this area and provides additional capacity for load growth in
12 this same area.

13
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Witness) Michael W. Chambliss

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1 **Item 6)** *The titles of the various analyses in Exhibit B refer to Coleman*
2 *In-Service and Coleman Out-of-Service. Explain whether the "Coleman"*
3 *reference is the currently idled Coleman generating unit or the Coleman*
4 *EHV substation.*

5

6 **Response)** The terms "Coleman In-Service" and "Coleman Out-of-Service" in
7 Exhibit B are references to Big Rivers' currently idled Coleman generating
8 station.

9

10

11 **Witness)** Michael W. Chambliss

12

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1 **Item 7) Refer to the application, Exhibit C, the Electric Transmission**
2 **Line Route Selection Technical Report, in which the proposed routes are**
3 **designated as Lewisport Aluminum Mill ("LAM") 1 and 2. At pages 105-**
4 **106, the Alternate Route Analysis results show Route E as having a better**
5 **score for LAM 1 than Routes C or D, and Route B as having a better score**
6 **for LAM 2 than Route A. The Expert Judgment analysis (pages 111-119)**
7 **results in Route D's having the best score for LAM 1, rather than Route E,**
8 **and concludes that Route B has the best score for LAM 2, matching the**
9 **results of the Alternate Route Analysis.**

10
11 **a. Under "Project Management" on page 112, the first bullet**
12 **refers to Route E as having an extra transmission line**
13 **crossing that contributes to a higher cost. The cost**
14 **calculations on page 96 show Route E's cost at \$972,000,**
15 **which is roughly \$164,000 less than the cost of Route D.**
16 **Explain whether the higher cost associated with the**
17 **transmission line crossing is built into the \$972,000 amount**
18 **and provide an estimate of the amount of this cost.**

19 **b. Refer to page 113, under "Reliability." The last bullet**
20 **reflects that Route C received a value of 2 and states that it**
21 **is worse than Route D. Explain what distinguishes Routes C**
22 **and D from a reliability perspective.**

23 **c. Refer to page 113, under "Maintenance Cost" and "Double**
24 **Circuit Opportunity." The second bullet under**

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1 *"Maintenance Cost" indicates that Route E has a double*
2 *circuit opportunity, while the first bullet under "Double*
3 *Circuit Opportunity" states that Route E has no such*
4 *opportunities. Explain the apparent discrepancy.*

5 *d. Refer to page 116, under "Maintenance Cost" and "Double*
6 *Circuit Opportunity." The first bullet under "Maintenance*
7 *Cost" indicates that Route A has a double circuit*
8 *opportunity, while the first bullet under "Double Circuit*
9 *Opportunity" states that Route A no double circuit*
10 *opportunity. Explain the apparent discrepancy.*

11

12 **Response)**

13 a. When evaluating the individual routes by themselves, ignoring
14 any double circuit opportunities, Table 17: Cost Calculations
15 (page 96 of Exhibit C) estimated Route E at \$972,000. Table 17
16 used \$85,000 per mile for construction costs and did not include
17 extra costs for crossings. These costs are estimated at \$5,000 per
18 crossing.

19 b. Route C was evaluated to be slightly less reliable due to the poor
20 drainage adjacent to and on the north side of the railroad. This is
21 illustrated on page 58 of Exhibit C, Figure 25: Waterbodies
22 (Spannable Lakes and Ponds). Route C would require an angle
23 structure with guys and anchors. Placing an angle structure at

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- 1 this location is deemed as less reliable than the Route D option
2 which spans over this poorly drained area.
- 3 c. Route E does not have significant double circuit opportunities
4 while Route D does. There is an inadvertent typographical error
5 in Exhibit C on page 113, Part 7 bullet 2, which says "*Route E*
6 *received an Expert Judgment value of "3" since it has a double*
7 *circuit opportunity...*". This should say "*Route E received an*
8 *Expert Judgment value of "3" since it does not have significant*
9 *double circuit opportunity...*".
- 10 d. Route A has no double circuit opportunity. There is an
11 inadvertent typographical error in Exhibit C on page 116, Part 7
12 bullet 1, which says "*...Route A has a double circuit opportunity.*"
13 It should say "*...Route A has no double circuit opportunity.*"

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Witness) Michael W. Chambliss

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1 Item 8) *Refer to the map of the proposed routes attached to the*
2 *application. On the map labeled "Transmission Lines 1 & 2 Selected*
3 *Routes" there is one gray line going to the area that is the location of the*
4 *new northern substation (the end of Line 1), and then two gray lines*
5 *appear to go from the new northern substation into the Aleris plant. The*
6 *gray lines are labeled "Future 69" in the legend. The legend also has a*
7 *"Future 161" line, but there does not appear to be such a line on the map.*
8 *How does this information on the map pertain to paragraph 8 of the*
9 *application, which describes the need for construction of a 0.7-mile, 161-*
10 *kV transmission line out of the Big Rivers' Hancock Substation?*

11

12 **Response)** The 0.7 mile 161-kV line out of the Hancock County Substation was
13 inadvertently illustrated as gray indicating future 69 kV. This illustration
14 reflected a possible contingency plan to energize the 0.7 mile line at 69 kV. The
15 two additional lines stemming from the new northern substation will be Aleris-
16 owned distribution lines and were also inadvertently illustrated as gray. Big
17 Rivers has revised the illustration and the route map. With the ORIGINAL of
18 these responses, Big Rivers is providing three (3) copies of the revised route map.

19

20

21 **Witness)** Michael W. Chambliss

22

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1 **Item 9)** *On the map that is attached to the application and labeled*
2 *"Transmission Lines 1 & 2 Selected Routes" are the parcels labeled as*
3 *"Tract 20, 4, 5, 13, 1, 12, 10, and 3" all owned by Commonwealth Aluminum*
4 *Lewisport, LLC?*

5

6 **Response)** Yes. All tracts labeled numerically are owned by Commonwealth
7 Aluminum Lewisport, LLC.

8

9

10 **Witness)** Michael W. Chambliss

11

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1 **Item 10)** *Refer to the map that is attached to the application with the*
2 *cover sheet titled "Map of Alternative Routes Considered for Proposed*
3 *Transmission Lines" and labeled "Alternative Routes Not Selected" in the*
4 *lower right corner of the map. Route A (see application, Exhibit C, page*
5 *87 of 121, Figure 39), which was one of the routes not selected is not on this*
6 *map. In addition, the routes that were selected, Routes B and D (see*
7 *Exhibit C, page 119 of 121), are on the map. File a revised version of the*
8 *"Alternative Routes Not Selected" map by changing the title in the lower*
9 *right corner of the map to conform with the title on the cover sheet,*
10 *overlying Route A to the map, and identifying the substations.*

11

12 **Response)** With the ORIGINAL of these responses, Big Rivers is providing three
13 (3) copies of a revised version of the *"Map of Alternative Routes Considered for*
14 *Proposed Transmission Lines."*

15

16

17 **Witness)** Michael W. Chambliss

18

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dated May 15, 2015**

May 27, 2015

1 **Item 11) *What is the relationship of Commonwealth Aluminum***
2 ***Lewisport, LLC to Aleris?***

3

4 **Response)** The Aleris aluminum mill facility was formerly owned by
5 Commonwealth Aluminum Lewisport, LLC. Aleris was formed at the end of 2004
6 through the merger of Commonwealth Industries, Inc. and IMCO Recycling, Inc.

7

8

9 **Witnesses) Michael W. Chambliss**

10

BIG RIVERS ELECTRIC CORPORATION

**APPLICATION OF BIG RIVERS ELECTRIC CORPORATION
FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY
TO CONSTRUCT TWO 161 KV TRANSMISSION LINES
IN HANCOCK COUNTY, KENTUCKY
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1 **Item 12)** *How many years does Big Rivers expect both the existing and*
2 *the proposed 161-kV transmission facilities to be able to continue*
3 *providing reliable service to Aleris?*

4

5 **Response)** Based on the information currently available, Big Rivers believes
6 that with proper maintenance, the existing and proposed 161-kV transmission
7 facilities are expected to provide a useful service-life of approximately 50 years
8 during which reliable service is expected to be provided to Aleris.

9

10

11 **Witness)** Michael W. Chambliss

12

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1 **Item 13)** *What is the forecasted annual percentage load growth for the*
2 *next 10 years for the Lewisport, Kentucky, study area?*

3

4 **Response)** Big Rivers' average annual percentage native load growth for 2016
5 through 2025 is .8% in the latest approved load forecast, as indicated in the table
6 below.

7

Big Rivers Electric Corporation 2013 Native Load Growth Forecast 2016 - 2025	
2016	0.9 %
2017	0.9 %
2018	0.9 %
2019	0.8 %
2020	0.8 %
2021	0.8 %
2022	0.8 %
2023	0.8 %
2024	0.7 %
2025	0.7 %
2016-2025 Average	0.8 %

8

9

10 **Witness)** Mark J. Eacret

11

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1 **Item 14)** *Provide the time estimate required to complete the*
2 *construction of the proposed transmission lines.*

3

4 **Response)** Big Rivers estimates eighteen months are required to complete the
5 proposed transmission lines following the Commission's granting a Certificate of
6 Public Convenience and Necessity.

7

8

9 **Witness)** Michael W. Chambliss

10

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1 **Item 15)** *When does Big Rivers anticipate the need to increase the*
2 *capacity of the Coleman Extra High Voltage Substation 161/13.8-kV*
3 *transformer beyond its 2025 summer MVA rating?*

4

5 **Response)** The existing 161/13.8 kV transformers are not located at the
6 Coleman EHV. They are located at the existing Lewisport Aluminum Mill
7 Substation 1 (LAM-1). Given the load projections provided by Aleris, Big Rivers
8 does not anticipate increasing the 161/13.8 kV transformer capacity at any time in
9 the future.

10

11

12 **Witness)** Michael W. Chambliss

13

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1 **Item 16)** *Would the 100-foot easement provide adequate clearances to*
2 *potential obstruction at the edge of the easement even under extreme wind*
3 *conditions?*

4
5 **Response)** Yes. The required easement width is determined by calculating
6 conductor blow-out. Blow-out is determined by an equation that incorporates the
7 conductor final sag horizontal displacement, under a high wind condition, along
8 with a horizontal clearance requirement. Big Rivers' proposed design will limit
9 and minimize the amount of blow-out by utilizing relatively shorter span lengths.
10 This will limit the amount of sag and thus limit the blow-out to be within the
11 allowable limits for the proposed 100 ft. right-of-way.

12

13

14 **Witness)** Michael W. Chambliss

15

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1 *Item 17) Provide the one-line system diagrams for Big Rivers'*
2 *transmission and sub-transmission power systems in the LAM1 and LAM2*
3 *study areas. These diagrams should show configurations of transmission*
4 *facilities including conductor and transformer sizes and their normal*
5 *and emergency summer and winter thermal ratings.*

6

7 **Response)** Big Rivers does not have one-line system diagrams containing all of
8 the requested information. Please see the attached table for the facilities' normal
9 and emergency summer and winter ratings.

10 Big Rivers is also providing its Transmission System Map, which
11 illustrates conductor sizes and configurations, and its System One Line Switching
12 Diagram Eastern Division, which shows transformer sizes and configurations.
13 Both the map and diagram are CONFIDENTIAL; Big Rivers is submitting them
14 on both hardcopy and electronic media, *i.e.*, CONFIDENTIAL CD, with a Petition
15 for Confidential Treatment.

16

17

18 **Witness)** Michael W. Chambliss

Big Rivers Electric Corporation
Case No. 2015-00051
Facility Ratings - Lewisport Aluminum Mill (LAM) Area
Transformers

Substation	Transformer	High Side kVolts	Low Side kVolts	65 Degree Rating MVA
COL EHV ¹	1	345	161	420
COL EHV ¹	2	345	161	420
LAM-1	1	161	13.8	33.6
LAM-1	2	161	13.8	33.6
LAM-1	3	161	13.8	22.4

Big Rivers rates these transformers for summer and winter, normal and emergency at the stated 65 degree rating in MVA.

Transmission Lines

From Substation	To Substation	Summer Normal MVA	Summer Emergency MVA	Winter Normal MVA	Winter Emergency MVA
HANCK ²	DAVISS	265	265	335	335
HANCK ²	COL EHV ¹	265	265	335	335

Note(s):

1. - COL EHV = Coleman EHV
2. - HANCK = Hancock County

In the Matter of:

APPLICATION OF)
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AND NECESSITY)
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LINES)
IN HANCOCK COUNTY, KENTUCKY)

Case No.
2015-00051

Big Rivers Transmission System Map

CONFIDENTIAL RESPONSE

to
Item 17
of the
Commission Staff's Request for Information
dated May 15, 2015

FILED: May 27, 2014

**INFORMATION SUBMITTED UNDER PETITION FOR CONFIDENTIAL
TREATMENT**

In the Matter of:

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**Big Rivers System One Line Switching Diagram
Eastern Division**

CONFIDENTIAL RESPONSE

to
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May 27, 2015

1 **Item 18)** *Do the proposed routes for the new transmission lines intersect*
2 *or run parallel with any known gas transmission or gas distribution*
3 *pipelines?*

4

5 **Response)** Based on its research, Big Rivers is unaware of any gas pipelines
6 that intersect or run parallel to the routes of the proposed transmission lines.

7

8

9 **Witness)** Michael W. Chambliss

10

11

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1 **Item 19)** *Provide a more detailed map or maps showing pole placement*
2 *and type of pole, including identification of the substations, parcel lines,*
3 *parcel owner name(s) and PVA identifier from Exhibit G, and easement*
4 *along the selected routes Line 1 and Line 2.*

5

6 **Response)** With the ORIGINAL of these responses Big Rivers is providing three
7 (3) copies of a detailed map showing projected pole placement and type of pole,
8 identification of the substations, parcel lines, parcel owner name(s), Exhibit G's
9 PVA identifiers, and the easements along the selected routes Line 1 and Line 2.
10 The proposed transmission lines will use steel poles. Please note, this detailed
11 map also is responsive to PSC 1-8.

12

13

14 **Witness)** Michael W. Chambliss

15

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1 **Item 20)** *Provide the status of Big Rivers' acquisition of the necessary*
2 *easements for the proposed transmission line routes.*

3

4 **Response)** Big Rivers does not anticipate acquiring any easements for the
5 proposed transmission lines until after the Commission grants a Certificate of
6 Public Convenience and Necessity. However, in response to the newspaper
7 notices, a number of the property owners contacted Big Rivers with questions or
8 comments, and Big Rivers has discussed acquiring an option with one landowner.

9

10

11 **Witness)** Michael W. Chambliss

12

2015-0051

CONTAINS

LARGE OR OVERSIZED

MAP(S)

RECEIVED ON:
May 27th, 2015