

ORIGINAL



COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

**ELECTRONIC APPLICATION OF)
BIG RIVERS ELECTRIC CORPORATION)
FOR A CERTIFICATE OF PUBLIC)
CONVENIENCE AND NECESSITY TO)
CONSTRUCT A 161 KV TRANSMISSION LINE)
IN HENDERSON COUNTY, KENTUCKY)**

**Case No.
2022-00012**

**Responses to Commission Staff's
First Request for Information
dated February 28, 2022**

FILED: March 21, 2022

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VERIFICATION

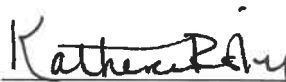
I, Michael S. Mizell, verify, state, and affirm that the data request response filed with this verification for which I am listed as witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Michael S. Mizell

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

 SUBSCRIBED AND SWORN TO before me by Michael S. Mizell on this the
day of March, 2022.



Notary Public, Ky. State at Large
My Commission Expires October 30, 2024
Notary ID: KYNP16841

**COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION**

In the Matter of:

ELECTRONIC APPLICATION OF)	
BIG RIVERS ELECTRIC CORPORATION)	
FOR A CERTIFICATE OF PUBLIC)	Case No.
CONVENIENCE AND NECESSITY TO)	2022-00012
CONSTRUCT A 161 KV TRANSMISSION LINE)	
IN HENDERSON COUNTY, KENTUCKY)	

VERIFICATION

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



Christopher S. Bradley

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Christopher S. Bradley on this
the 31st day of March, 2022.



Notary Public, Ky. State at Large
My Commission Expires October 31, 2024
Notary ID: KYNP16841

**COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION**

In the Matter of:

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IN HENDERSON COUNTY, KENTUCKY)	

VERIFICATION


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



Mark J. Eacret

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Mark J. Eacret on this the 31st
day of March, 2022.



Notary Public, Ky. State at Large
My Commission Expires October 31, 2024
Notary ID: K4NP16841

BIG RIVERS ELECTRIC CORPORATION
ELECTRONIC APPLICATION OF
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Response to Commission Staff's
First Request for Information
dated February 28, 2022

March 21, 2022

1 **Item 1)** *Refer to the Application, generally. Explain whether an environ-*
2 *mental impact assessment is required or has been completed for the proposed*
3 *projects. If so, provide a copy of the assessment.*

4

5 **Response)** Assuming that the term “environmental impact assessment” relates to
6 an environmental review mandated by the National Environmental Policy Act
7 (“NEPA”), a NEPA review is only required when a federal agency takes a major action
8 that could impact the environment. Since Big Rivers is seeking private financing for
9 this project and is not utilizing financing provided by the United States Department
10 of Agriculture’s Rural Utilities Service, there is no such triggering federal action.

11

12

13 **Witness)** Michael S. Mizell

BIG RIVERS ELECTRIC CORPORATION
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Response to Commission Staff's
First Request for Information
dated February 28, 2022

March 21, 2022

1 **Item 2)** *Refer to the Application, generally. Provide copies of any public*
2 *comments received regarding the proposed line and explain whether any*
3 *public meetings have been held regarding the proposed line and route.*

4

5 **Response)** Big Rivers is unaware of any public comments made regarding the
6 proposed line. There have not been any public meetings held by Big Rivers
7 concerning the proposed line and route.

8

9

10 **Witness)** Christopher S. Bradley

BIG RIVERS ELECTRIC CORPORATION
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Response to Commission Staff's
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dated February 28, 2022

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1 **Item 3)** *Refer to the Application, page 2, lines 8–17 and page 5, lines 10–*
2 *14. Provide a cost benefit study demonstrating that the projects are cost*
3 *effective.*

4

5 **Response)** The confidential attachment to this Response shows a calculation of the
6 projected benefit to Big Rivers' Member-Owners, in net present value ("NPV") over
7 the first twenty years in cash flow, from sales to the Pratt paper mill, over what would
8 have been realized in the MISO market. The estimated cost for the three proposed
9 projects is less than the NPV of the cash flow generated by the transaction. The cash
10 flow associated with the Pratt sale does not include a valuation for any additional
11 economic activity that it will bring to the area. Additionally, the proposed upgrades
12 to the transmission infrastructure will strengthen the transmission system in the
13 south Henderson, Kentucky area for further development and provide benefits
14 related to reliability described more fully in Big Rivers' response to Item No. 12 of
15 these information requests.

16

BIG RIVERS ELECTRIC CORPORATION

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dated February 28, 2022

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1

2

3 **Witness)** Mark J. Eacret

**Big Rivers Electric Corporation
Calculation of Member Benefits
Pratt Paper Mill**

	2023	2024	2025	2026	2027
MW					
MWh					
Demand					
Revenue					
Energy					
FAC					
Environmental					
Surcharge					
Non-FAC PPA					
MRSM					
Total Energy					
Demand Revenue					
EDR					
Energy					
Add Back MRSM					
Total Revenue					

**Big Rivers Electric Corporation
Calculation of Member Benefits
Pratt Paper Mill**

	2028	2029	2030	2031	2032
MW					
MWh					
Demand					
Revenue					
Energy					
FAC					
Environmental					
Surcharge					
Non-FAC PPA					
MRSM					
Total Energy					
Demand Revenue					
EDR					
Energy					
Add Back MRSM					
Total Revenue					

**Big Rivers Electric Corporation
Calculation of Member Benefits
Pratt Paper Mill**

2023	2024	2025	2026	2027
-------------	-------------	-------------	-------------	-------------

Expenses

Capacity	\$3.80				
Energy					
MISO Market Expenses					
Total Market Value					
Net Margin					

**Big Rivers Electric Corporation
Calculation of Member Benefits
Pratt Paper Mill**

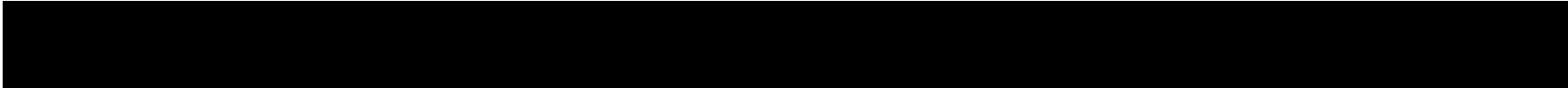
	2028	2029	2030	2031	2032
--	------	------	------	------	------

Expenses

Capacity	\$3.80				
Energy					
MISO Market Expenses					
Total Market Value					
Net Margin					

**Big Rivers Electric Corporation
Calculation of Member Benefits
Pratt Paper Mill**

CALCULATION



MW/Months [Redacted]
Present Value of MWh [Redacted] Present Value at [Redacted]

NPV Total Revenue [Redacted]
NPV Total Market Value [Redacted]
NPV 10 Year Net Margin [Redacted]

*Cash Flow for Years 11-20 [Redacted]
Transmission Investment (20,200,000)

Net Present Value [Redacted]

*Cash Flow of Years 11-20 Calculation:

$$\frac{\text{(Present Value of an Annuity Beginning in 2033)} \times \text{(The Calculated Net Margin for Year 2032)}}{1.04^{10}}$$

$$[Redacted] = [Redacted]$$

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First Request for Information
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1 **Item 4)** *Refer to the Application, Exhibit A, Direct Testimony of*
2 *Christopher S. Bradley (Bradley Testimony), page 3, lines 1–8. Explain*
3 *whether the new Pratt paper mill will self-supply any portion of its energy*
4 *requirements.*

5

6 **Response)** No portion of the Pratt paper mill energy requirements will be self-
7 supplied.

8

9

10 **Witness)** Christopher S. Bradley

BIG RIVERS ELECTRIC CORPORATION
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Response to Commission Staff's
First Request for Information
dated February 28, 2022

March 21, 2022

1 **Item 5)** *Refer to the Application, Exhibit A, Bradley Testimony, page 3,*
2 *lines 14–16. Provide a detailed map showing the existing and re-routing*
3 *pathways of the lines into the switching station.*

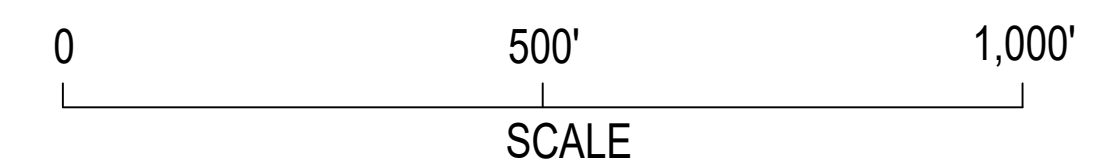
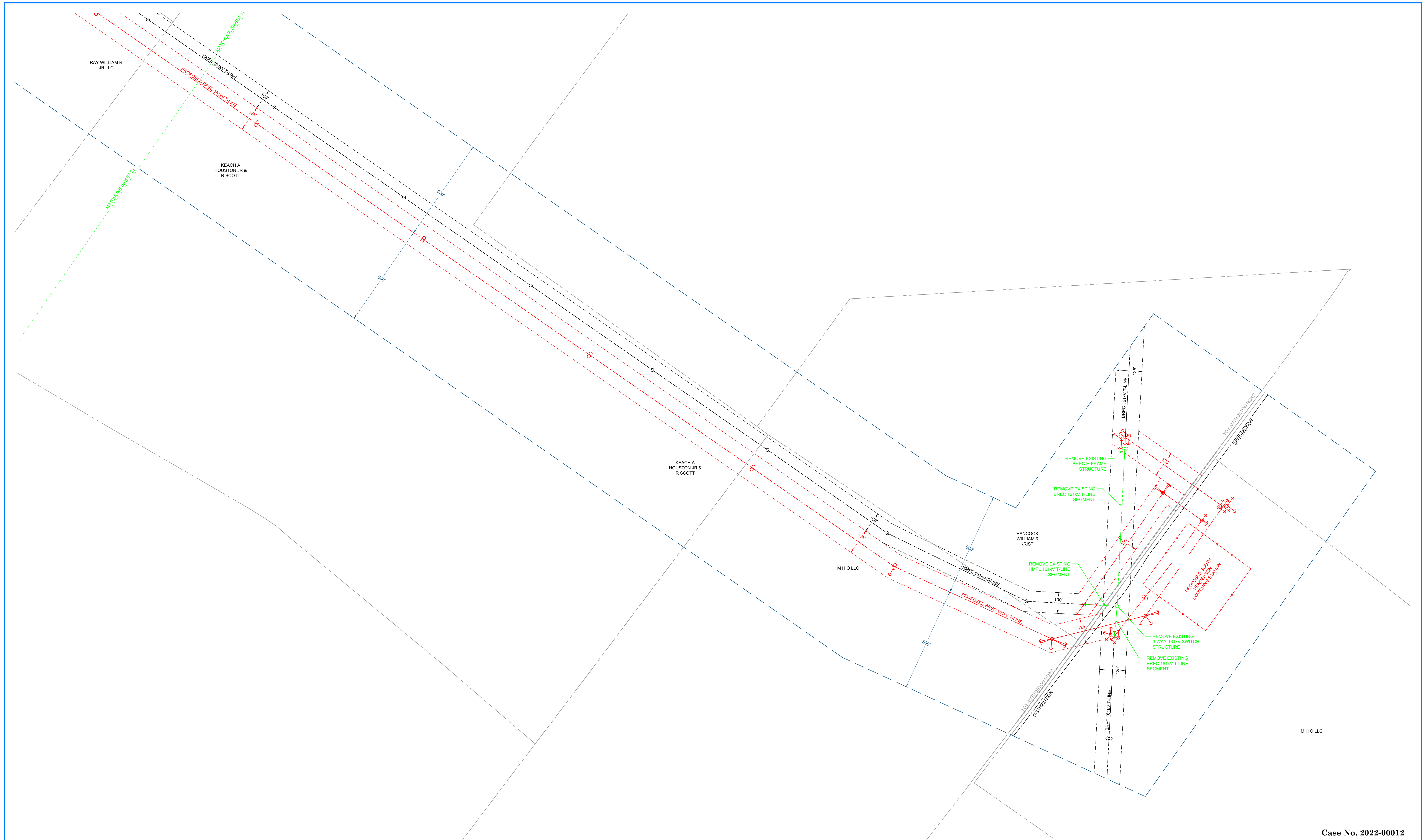
4

5 **Response)** The diagram attached as Exhibit C to Big Rivers' Application, Sheet 1
6 of 6, shows the re-routed lines into the proposed switching station. Please see the
7 attachment to this response, which adds the existing line segments to be removed to
8 that diagram.

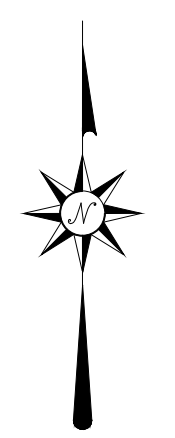
9

10

11 **Witness)** Christopher S. Bradley



- PRELIMINARY
- FOR BID
- FOR CONSTRUCTION
- FOR RECORD
- "AS BUILT"
- REFERENCE




LEGEND

- ROAD
- RAILROAD
- EXISTING T-LINE
- PROPOSED T-LINE
- EXISTING POLE
- PROPOSED POLE
- PROPOSED DOWNGUY
- EXISTING EASEMENT
- PROPOSED EASEMENT
- PROPERTY LINE
- 500' CENTERLINE OFFSET

REV	DATE	DRFT	ENGR	REVISION DESCRIPTION
A	01/10/22	ABG		ISSUED FOR REFERENCE
B	01/17/22	ABG		UPDATE PVA DATA
C	01/26/22	ABG		UPDATE LINE ROUTING NEAR STATION
D	03/02/22	ABG		UPDATE TO INCLUDE EXISTING TRANSMISSION LINE SEGMENTS WHICH WILL BE REMOVED AS PART OF PROPOSED WORK.

W.O. _____
SCALE: 1" = 200'

Case No. 2022-00012
Attachment to Response to PSC 1-5



**SOUTH HENDERSON - HENDERSON PAPER MILL
161kV TRANSMISSION LINE
CENTERLINE & EASEMENT BOUNDARIES**

DRAWING REVIEW	DATE
ENGINEER	01-10-2022
DRAWN	

SHEET 1 of 6

BIG RIVERS ELECTRIC CORPORATION
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Response to Commission Staff's
First Request for Information
dated February 28, 2022

March 21, 2022

1 **Item 6)** *Refer to the Application, Exhibit A, Bradley Testimony, page 3,*
2 *lines 17–21 and page 4, lines 1–7. Provide a detailed drawing of the switching*
3 *station showing the existing and proposed line termination and*
4 *configurations.*

5

6 **Response)** Please see the two attachments to this response. Attachment No. 1
7 shows the configuration of the proposed switching station and the existing
8 transmission lines in the area near the proposed switching station site. Attachment
9 No. 2 shows the configuration of the proposed switching station and illustrates the
10 proposed transmission line routing into the switching station.

11

12

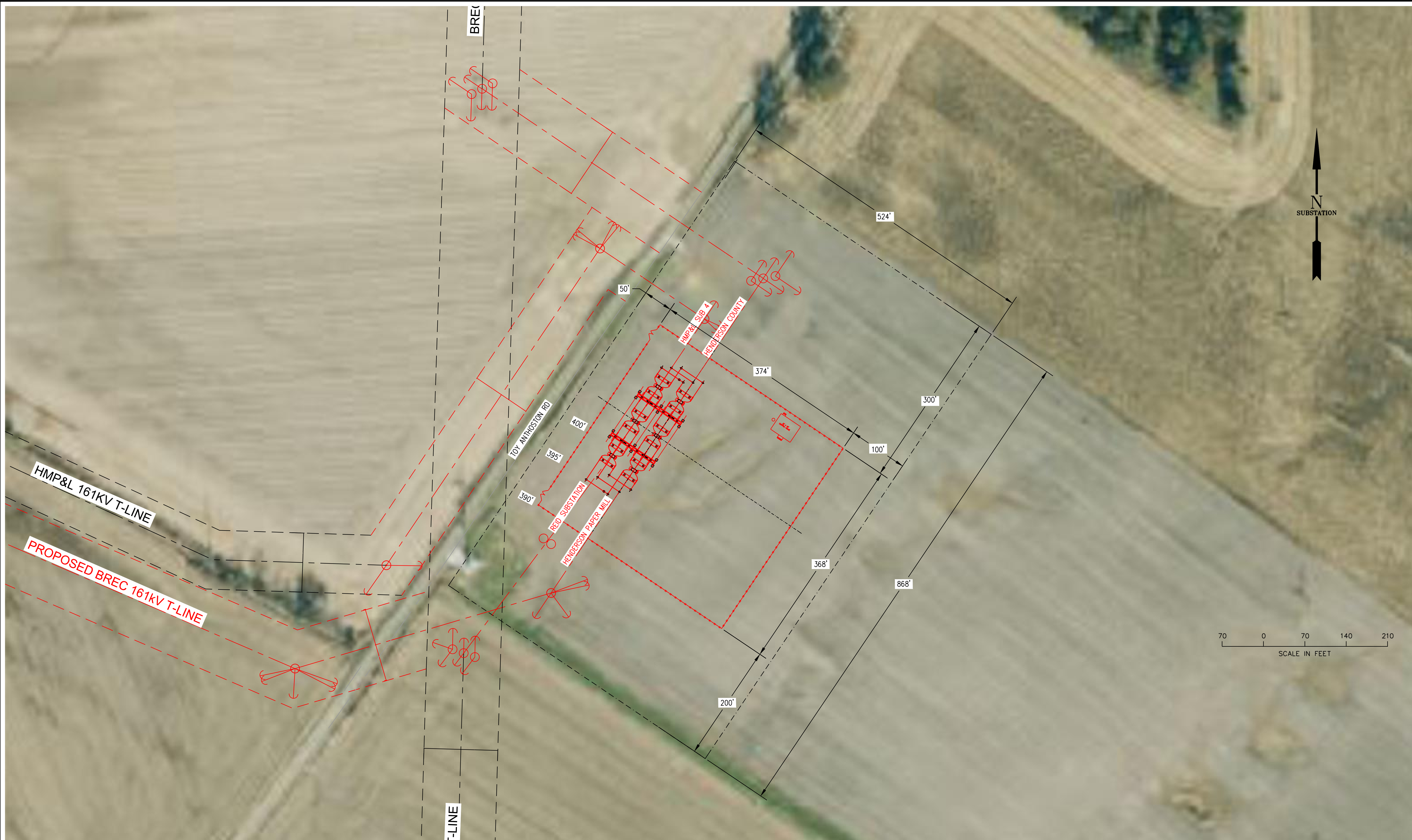
13 **Witness)** Christopher S. Bradley



Case No. 2022-00012 Attachment No. 1 to Response PSC 1-6

NO.	DATE	DRFT	ENGR	REVISION DESCRIPTION
A	01-25-22			PROPERTY EXHIBIT

				<p>SOUTH HENDERSON SUBSTATION PROPERTY AERIAL VIEW EXISTING TRANSMISSION LINES</p>	
SCALE:	AS SHOWN	DRAWING REVIEW	DATE	DWG. NO.	
W.O.		DRAWN	EED/P&D		
		CHECKED			
CONT.		ENGINEER	PAH/P&D	01-25-22	
		APPROVED		SEQ.	SH.



Case No. 2022-00012 Attachment No. 2 to Response to PSC 1-6

NO.	DATE	DRFT	ENGR	REVISION DESCRIPTION
A	01-25-22			PROPERTY EXHIBIT



**SOUTH HENDERSON SUBSTATION
PROPERTY AERIAL VIEW
SUB ULTIMATE ARRANGEMENT**

SCALE:	AS SHOWN	DRAWING REVIEW	DATE	DWG. NO.
W.O.		CHECKED	01-25-22	
CONT.		ENGINEER		SEQ.
		APPROVED		SH.

BIG RIVERS ELECTRIC CORPORATION
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dated February 28, 2022

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1 **Item 7)** *Refer to the Application, Exhibit A, Bradley Testimony, page 4,*
2 *lines 9–13. Explain whether an existing or new 12 kV distribution circuit will*
3 *be served from the proposed 161/12.47 kV substation (Project C).*

4

5 **Response)** Pratt Paper (KY) LLC (“Pratt”) will be responsible for constructing and
6 installing two (2) new 12 kV circuits to serve its facility.

7

8

9 **Witness)** Christopher S. Bradley

BIG RIVERS ELECTRIC CORPORATION
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Response to Commission Staff's
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dated February 28, 2022

March 21, 2022

1 **Item 8)** *Refer to the Application, Exhibit A, Bradley Testimony, page 5,*
2 *lines 1–8. Provide the anticipated load of the new Pratt paper mill, the mill*
3 *combined with the estimated total load growth as a result of the new mill,*
4 *and the anticipated impact on BREC's reserve margin in each scenario.*

5

6 **Response)** Based on Pratt Paper's draft contract, the Pratt load is expected to
7 increase Big Rivers' native load by [REDACTED] beginning [REDACTED]. Further growth
8 has not yet been quantified. MISO planning reserve margin requirements add
9 approximately [REDACTED] so the Big Rivers reserve margin will increase by approximately
10 [REDACTED].

11

12

13 **Witness)** Christopher S. Bradley

BIG RIVERS ELECTRIC CORPORATION
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1 **Item 9)** *Refer to the Application, page 5, lines 7–9. State whether the*
2 *current transmission system would experience reliability issues if the new*
3 *Pratt paper mill were to be served from existing 161 kV transmission lines. If*
4 *so, provide a detailed explanation of the issues that would be experienced,*
5 *including any MISO transmission studies of the relevant existing and*
6 *proposed transmission lines.*

7

8 **Response)** The proposed 161 kV transmission line will allow the Pratt paper mill
9 to be served from the nearest existing 161 kV transmission line owned by Big Rivers.
10 No reliability issues are expected with this service plan.

11

12

13 **Witness)** Christopher S. Bradley

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First Request for Information
dated February 28, 2022

March 21, 2022

1 **Item 10)** *State whether alternatives to the proposed projects were*
2 *considered to enable BREC to supply load to the new Pratt paper mill.*

3

4 **Response)** An alternative plan to supply the load was evaluated. The alternative
5 included the addition of a 161 kV terminal at the Reid EHV substation, 12 miles of
6 161 kV transmission overbuilt on an existing Big Rivers 69 kV line, and a 6.5 mile
7 new terrain 161 kV transmission line.

8

9 **Witness)** Christopher S. Bradley

BIG RIVERS ELECTRIC CORPORATION
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CASE NO. 2022-00012

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First Request for Information
dated February 28, 2022

March 21, 2022

1 **Item 11)** *For all alternatives identified in Item 10, provide cost estimates*
2 *and an analysis of why the alternative was not chosen.*

3

4 **Response)** The cost of the alternative described in Item 10 was \$24,800,000 as
5 compared to \$20,200,000 estimated for the proposed projects. The alternative
6 included a total of 18.5 miles of 161 kV transmission construction as compared to the
7 proposed 7.1 mile project. When the cost, the total miles of necessary transmission
8 line construction, and time to construct were considered, the proposed project was
9 selected as the preferred option.

10

11

12 **Witness)** Christopher S. Bradley

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Response to Commission Staff's
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dated February 28, 2022

March 21, 2022

1 **Item 12)** *Refer to the Application, page 3, lines 1–9. Explain the need to*
2 *enhance reliability to existing retail members served by Kenergy.*

3

4 **Response)** The 69 kV network in the immediate area has limited capacity. The
5 addition of the proposed 161 kV circuit allows the substantial load addition to be
6 served directly from the 161 kV transmission network and avoid oversubscription of
7 the 69 kV network and the reliability and power quality issues expected with that
8 scenario.

9 Additionally, the proposed circuit includes the construction of a 161 kV
10 switching station. In addition to serving as the source for Pratt Paper, the switching
11 station will also allow replacement of existing 161 kV line switches and convert a 21
12 mile three-terminal circuit into three individual two-terminal line sections. The
13 shorter two-terminal circuits provide greater sectionalizing and switching flexibility
14 and reduced line exposure. This switching station can also be expanded in the future
15 to add transformers as needed to serve Kenergy load.

16

BIG RIVERS ELECTRIC CORPORATION
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CASE NO. 2022-00012

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First Request for Information
dated February 28, 2022

March 21, 2022

1

2

3 **Witness)** Christopher S. Bradley

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March 21, 2022

1 **Item 13)** *Refer to the Application, page 9, lines 1–4.*

2 *a. Explain why BREC anticipates needing to move the location of the*
3 *proposed transmission line up to 500 feet on either side of the*
4 *centerline.*

5 *b. Explain all measures taken by BREC, in the planning process for*
6 *the proposed transmission line, to avoid the need to move the*
7 *proposed transmission line up to 500 feet on either side of the*
8 *centerline from location shown on the maps filed with the*
9 *application.*

10

11 **Response)**

12 a. Big Rivers does not anticipate a need to move the location of the proposed
13 transmission line unless unexpected conditions are discovered. However, Big
14 Rivers is requesting authority if such a scenario arises, to move the
15 transmission line up to 500 feet on either side of the centerline, provided that
16 no new property owners are affected. Unexpected conditions may include, but

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CASE NO. 2022-00012

Response to Commission Staff's
First Request for Information
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March 21, 2022

1 are not limited to the following: unsuitable subsurface conditions, new
2 development not present during the route study, and landowner requests for
3 changes to the line locations.

4 b. While unexpected conditions cannot be fully accounted for during the planning
5 phase, Big Rivers' preliminary engineering has included measures to minimize
6 the potential for changes to the proposed route. These measures include the
7 completion of a route study, an aerial LiDAR survey, a field review of the
8 proposed route, and meetings with impacted property owners along the route.
9 The measures have provided Big Rivers with a high degree of confidence in the
10 feasibility of building the transmission line along the proposed route.

11

12

13 **Witness)** Christopher S. Bradley

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1 **Item 14)** *Refer to the Application, Exhibit A, Bradley Testimony, page 7,*
2 *lines 1–4. Explain how the construction costs recovered through the MISO*
3 *Attachment O Formula Rate for Transmission service will affect customers.*

4

5 **Response)** When completed and placed in-service, the incremental transmission
6 plant investment will be included in the following year Attachment O formula rate
7 filing. The new load will be included in the Attachment O formula rate divisor. The
8 net impact to the existing transmission customers will not be determined until the
9 following year when the new Attachment O formula rates are calculated. The existing
10 members will not be directly impacted.

11

12

13 **Witness)** Christopher S. Bradley

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March 21, 2022

1 **Item 15)** *Refer to the Bradley testimony, page 7, lines 19–22, page 8, lines*
2 *1–2. Provide a detailed description as to what conditions may exist that*
3 *could result in the moving of the switching station and how it might affect*
4 *the other projects.*

5

6 **Response)** Big Rivers plans to perform geotechnical investigations at the proposed
7 site to determine if there are any subsurface conditions that may be unsuitable for
8 construction of the switching station in the location provided. These conditions
9 would include:

- 10 1. Discovery of unsuitable soils with less than 1000 psf bearing capacity. This
11 could eliminate the possibility of using spread foundations as well as
12 drastically complicate the design and increase the cost of deep foundations.
- 13 2. Determination of the substation site to contain potentially liquefiable soils in
14 the top 100' necessitating a seismic site classification F. This designation could
15 drastically increase the cost of the above ground structures and potentially
16 require alternate methods of construction and ground improvement be utilized.

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March 21, 2022

1 3. Discovery of rare adverse subsurface conditions i.e. voids, perched water
2 tables, excessive groundwater, subsurface springs, soils with high shrink/swell
3 potential, etc.

4 Discovery of one of the listed conditions would not necessarily necessitate moving the
5 substation. The condition would first have to be evaluated, cost of remediation
6 determined, then a cost benefit analysis performed.

7 In this proceeding, Big Rivers requests authority, if geotechnical investigations
8 conclude that moving the switching station is necessary, to move the switching
9 station site so long as the switching station is not moved onto property owned by a
10 different landowner and so long as the move does not cause the associated
11 transmission lines to affect new property owners.

12

13

14 **Witness)** Christopher S. Bradley

BIG RIVERS ELECTRIC CORPORATION
ELECTRONIC APPLICATION OF
BIG RIVERS ELECTRIC CORPORATION
FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY
TO CONSTRUCT A 161 KV TRANSMISSION LINE
IN HENDERSON COUNTY, KENTUCKY
CASE NO. 2022-00012

Response to Commission Staff's
First Request for Information
dated February 28, 2022

March 21, 2022

1 **Item 16)** *Refer to the Application, page 5, lines 12–14, and the Bradley*
2 *Testimony page 7, lines 11–22, and page 8, lines 1–2. Provide a detailed*
3 *analysis and documented support for the legal conclusion that Projects B*
4 *and C are both extensions in the ordinary course of business and therefore*
5 *neither project requires a Certificate of Public Convenience and Necessity.*

6

7 **Response)** Projects B and C are extensions of Big Rivers' existing systems in the
8 ordinary course of business because neither project (1) results in wasteful duplication
9 of plant, equipment property, or facilities; (2) competes with existing certificates or
10 service of other utilities; or (3) involves a sufficient capital outlay to materially affect
11 the existing financial condition or require an increase its wholesale rates.

12 (1) Neither project results in wasteful duplication because there is no
13 multiplicity of physical properties and there is a need for the projects. As explained
14 in Big Rivers' response to Item No. 12 of these information requests, the 69 kV
15 network in the immediate area has limited capacity. The proposed Project B, a 161
16 kV switching station, will allow service to the area as well as allowing replacement

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1 of the 161 kV line switches and converting a 21 mile three-terminal circuit into three
2 individual two-terminal line sections, which provides greater sectionalizing and
3 switching flexibility and reduced line exposure. As explained in Big Rivers' response
4 to Item No. 9 of these information requests, the proposed 161 kV transmission line
5 will allow the Pratt paper mill to be served from the nearest existing 161 kV
6 transmission line owned by Big Rivers. The proposed Project C substation will be
7 built on land adjacent to Pratt paper mill on property own by Henderson County
8 Economic Development, which will be gifted to Big Rivers.

9 While these are new stations, there is a demonstrated need for the stations in
10 South Henderson, including the need for the transmission upgrades that are required
11 to provide service to Pratt's paper mill and provide electric service to other new and
12 expanded loads in the Henderson County area.

13 (2) The switching station and substation are proposed to be located within
14 Kenergy's service territory and both stations will be used to serve customers of
15 Kenergy. Therefore, neither project will compete with existing certificates or service
16 of other utilities.

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1 (3) The cost to construct and operate Projects B and C will not materially
2 affect Big Rivers' financial condition or result in an increase in Big Rivers' wholesale
3 power rates. Big Rivers' net utility plant was estimated at \$907,987.686 as of
4 December 31, 2021. The total estimated construction cost of Project B (\$6,070,000)
5 represents 0.67% (67 hundredths of a percent) of Big Rivers' net utility plant, and
6 Project C's estimated construction cost (\$4,755,000) represents 0.52% (52 hundredths
7 of a percent). The combined cost of the two projects (\$10,825,000) represents only
8 1.19% (one and 19 hundredths of a percent) of Big Rivers' net utility plant.

9 Additionally, as explained on page five (5) of the Application, Big Rivers
10 anticipates a return on its investment as a result of the new construction being
11 included in the rates for transmission service under Big Rivers' Open Access
12 Transmission Tariff that could serve as an offset to future rate increases for Big
13 Rivers' Members. Therefore, neither project involves a sufficient capital outlay to
14 materially affect the existing financial condition or require an increase to its
15 wholesale rates.

16

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1

2

3 **Witness)** Christopher S. Bradley