

ORIGINAL



COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

In the Matter of:

ELECTRONIC)	Case No.
2020 INTEGRATED RESOURCE PLAN OF)	2020-00299
BIG RIVERS ELECTRIC CORPORATION)	

**Responses to the Office of the Attorney General's
Supplemental Data Requests
dated
April 20, 2021**

FILED: May 11, 2021

ORIGINAL

BIG RIVERS ELECTRIC CORPORATION

**ELECTRONIC
2020 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2020-00299**

VERIFICATION

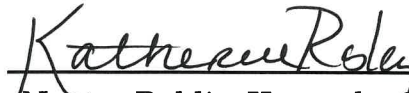
I, Nathaniel A. ("Nathan") Berry, verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Nathaniel A. ("Nathan") Berry

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Nathaniel A. ("Nathan") Berry on this the 1st day of May, 2021.



Notary Public, Kentucky State at Large

Kentucky ID Number

KYNP16841

My Commission Expires

October 31, 2024



BIG RIVERS ELECTRIC CORPORATION

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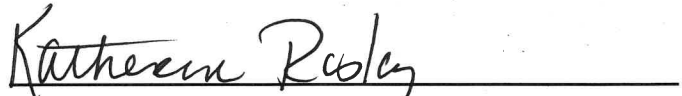
I, Christopher S. ("Chris") Bradley, verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Christopher S. ("Chris") Bradley

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Christopher S. ("Chris") Bradley on this the 11th day of May, 2021.



Notary Public, Kentucky State at Large

Kentucky ID Number

KYNP16841

My Commission Expires

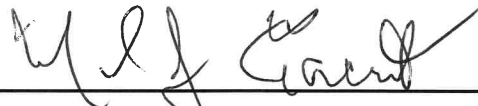
October 31, 2024

BIG RIVERS ELECTRIC CORPORATION

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VERIFICATION

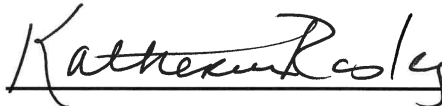
I, Mark J. Eacret, verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Mark J. Eacret

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

11th SUBSCRIBED AND SWORN TO before me by Mark J. Eacret on this the
day of May, 2021.



Notary Public, Kentucky State at Large

Kentucky ID Number

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May 11, 2021

1 **Item 1)** *Reference BREC's Attachment to AG 1-1 (a). Explain how a*
2 *resource mix with 20% solar allows for BREC to meet its capacity demands.*

3

4 **Response)** Please see Big Rivers' response to Item 28 of Commission Staff's
5 Second Request for Information. That response and the related attachment show
6 solar generation's contribution to meeting Big Rivers' capacity demands.

7

8

9 **Witness)** Mark J. Eacret

10

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1 **Item 2)** *Reference BREC's response to AG 1-25. Explain whether BREC*
2 *believes there is a level of penetration into BREC's generation mix for solar*
3 *that BREC considers safe and which will not adversely impact reliability.*

4

5 **Response)** Big Rivers' response to Item 25 of the Attorney General's Initial Data
6 Requests referenced testimony by Mr. John Bear, Chief Executive Officer of the
7 Midcontinent Independent System Operator, Inc. ("MISO"). Mr. Bear described
8 challenges that started at about the 30% level within MISO. Big Rivers has no
9 reason to believe that Mr. Bear's assessment is inaccurate.

10 However, there is always uncertainty around such an assessment.
11 Addressing that uncertainty is one of the benefits of converting Big Rivers' Green
12 Station coal units to natural gas. That conversion project extends the life of two
13 large dispatchable generators by at least seven years, while progress is being made
14 on the resolution of some of the issues around intermittent generation, such as wind
15 and solar.

16

17 **Witness)** Mark J. Eacret

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1 Item 3) *Reference the response to PSC DR 1-4, which cited to page 144*
2 *of the Company's 2020 IRP, which states, "At the base case inputs and the*
3 *current proposed PPA costs, the model would continue to add solar until*
4 *reserve margins were met." The response also cautioned that: (i) "A*
5 *portfolio with 100% solar generation would expose Big Rivers*
6 *Member/Owners to significant market risk for capacity and energy;" (ii)*
7 *extreme events such as the February 2021 Polar Vortex would exacerbate*
8 *those risks; and (iii) overreliance on intermittent resources has been*
9 *identified as a factor in the 2020 California brownouts, and February 2021*
10 *price volatility and brownouts in ERCOT.*

11 a. *Explain at what point the reserve requirements would be met.*

12 b. *Does BREC have a maximum amount of solar generation that it*
13 *plans to have in its generation mix?*

14

15

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1 **Response)**

2 a. Reserve requirements are met when capacity available (denoted in Zonal
3 Resource Credits) is equal to the sum of the Big Rivers projected MISO
4 coincident peak, plus losses, plus planning reserves.

5 b. Big Rivers has no plans to add any additional solar generation to its
6 generation mix. Please see Big Rivers' response to Item 2 of the Attorney
7 General's Supplemental Data Requests.

8

9

10 **Witness)** Mark J. Eacret

11

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1 **Item 4)** *Explain how BREC intends to ensure a consistent and constant*
2 *supply of natural to operate its gas-fired power plants. Include in your*
3 *response whether BREC intends to at least investigate the pricing of firm*
4 *gas delivery contracts.*

5

6 **Response)** Big Rivers plans to upgrade the high pressure reducing station, install
7 a new low pressure reducing station, install four new flow meters, and install piping
8 from the low pressure reducing station to the plant. Big Rivers did evaluate the
9 pricing of firm gas delivery in its Application in Case No. 2021-00079.¹

10

11

12 **Witness)** Nathaniel A. Berry

13

¹ See *In the Matter of: Electronic Application of Big Rivers Electric Corporation for a Certificate of Public Convenience and Necessity Authorizing the Conversion of the Green Station Units to Natural Gas-Fired Units and an Order Approving the Establishment of a Regulatory Asset*, Case No. 2021-00079. Application filed March 1, 2021.

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1 **Item 5)** *Reference BREC's response to AG 1-16. Does BREC believe that*
2 *at some future point it could become involved in SEEM? Explain.*

3

4 **Response)** At this point, Big Rivers does not anticipate participating in the
5 Southeast Energy Exchange Market ("SEEM"). Big Rivers currently only enters
6 into a very limited number of transactions with one of the fifteen (15) entities listed
7 as "Expected SEEM Members" on the SEEM website. Those transactions are
8 facilitated by grandfathered MISO transmission. Paying for transmission out of
9 MISO makes other transactions cost prohibitive.

10 If at some point Big Rivers finds that it can create value for its Member–
11 Owners by becoming more involved in SEEM, Big Rivers will do so.

12

13

14 **Witness)** Mark J. Eacret

15

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1 **Item 6)** *On a mid-term to long-term basis, does BREC intend to pursue*
2 *additional off-system sales through PPAs, such as the contracts with the*
3 *Nebraska municipalities?*

4

5 **Response)** Big Rivers will always look for opportunities to create value for its
6 Member–Owners, and Big Rivers’ preference is to create that value through growth
7 in its Member–Owners’ retail load. However, if Big Rivers projects that it will have
8 capacity and/or energy in excess of what is needed to serve that retail load, it is
9 often more profitable to sell that capacity and/or energy through a mid– to long–
10 term Power Purchase Agreement (PPA), rather than the short–term energy
11 markets and the MISO Planning Resource Auction. In such a situation, Big Rivers
12 would pursue those additional sales.

13

14

15 **Witness)** Mark J. Eacret

16

BIG RIVERS ELECTRIC CORPORATION

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1 **Item 7)** *Provide a discussion regarding BREC's short-term plans for*
2 *upgrading existing transmission facilities, and/or for constructing new*
3 *ones.*

4 *a. Provide an update on the MISO Duff-Coleman project. If this*
5 *project has been completed, explain its usefulness to BREC and*
6 *whether that usefulness has matched initial expectations/*
7 *projections.*

8

9 **Response)** The planned near-term transmission projects are intended to improve
10 system reliability or to satisfy voltage and facility loading criteria with the expected
11 system conditions. Significant projects are shown in the **CONFIDENTIAL**
12 attachment to this response.

13 a. The Duff–Coleman circuit is complete and was placed in service on June
14 11, 2020. The circuit provides system support, especially for the eastern
15 side of Big Rivers' transmission system during planned and emergency
16 outage situations. The impact and usefulness of the circuit is consistent
17 with expectations.

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1

2

3 **Witness)** Christopher S. Bradley

4

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1 **Item 8)** *Reference BREC's response to AG 1-26. Is BREC certain that*
2 *solar power prices will not be lower in 5 years than the price BREC is paying*
3 *under its 20-year contract? Same question for solar power prices in 10 years,*
4 *and in 15 years.*

5

6 **Response)** No, Big Rivers is not certain that solar power prices will not be lower
7 in five years, ten years, or fifteen years. Big Rivers is also not certain that they will
8 not be higher over those time periods. The elimination of that uncertainty is the
9 value of entering into a twenty-year agreement at a fixed price now, particularly
10 when the price paid for the energy, capacity, and environmental attributes is less
11 than the projected costs of those commodities purchased separately.

12

13

14 **Witness)** Mark J. Eacret

15