ORIGINAL

Big Rivers
ELECTRIC CORPORATION

Your Touchstone Energy® Cooperative

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF BIG RIVERS ELECTRIC CORPORATION FOR REVIEW OF ITS MRSM CHARGE FOR CALENDAR YEAR 2020	)))))	**Case No. 2021-00061**

APPLICATION
and
EXHIBITS

FILED: February 26, 2021

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF BIG RIVERS ELECTRIC CORPORATION FOR REVIEW OF ITS MRSM CREDIT FOR CALENDAR YEAR 2020	**)**	**Case No. 2021-00061**

APPLICATION

Comes now Big Rivers Electric Corporation ("Big Rivers" or the "Company"), by counsel, pursuant to the Kentucky Public Service Commission's (the "Commission") June 25, 2020 Order in Case No. 2020-00064;[1] its August 6, 2020 Order in Case No. 2019-00435; [2] its August 17, 2020 Order in Case No. 2019-00365;[3] 807 KAR 5:001, and other applicable law, and for its Application in the above-captioned matter, respectfully states as follows:

[1] *In the Matter of: Electronic Application of Big Rivers Electric Corporation for Approval To Modify Its MRSM Tariff, Cease Deferring Depreciation Expenses, Establish Regulatory Assets, Amortize Regulatory Assets, and Other Appropriate Relief*, P.S.C. Case No. 2020-00064, Order, Ordering Paragraph No. 10 (June 25, 2020).

[2] *In the Matter of: Electronic Application of Big Rivers Electric Corporation for Approval of its 2020 Environmental Compliance Plan, Authority to Recover Costs Through a Revised Environmental Surcharge and Tariff, the Issuance of a Certificate of Public Convenience and Necessity For Certain Projects, and Appropriate Accounting and Other Relief*, P.S.C. Case No. 2019-00435, Order, Ordering Paragraph No. 16 (August 6, 2020).

[3] *In the Matter of: Electronic Joint Application of Big Rivers Electric Corporation and Meade County Rural Electric Corporation and Meade County Rural Electric Cooperative Corporation For (1) Approval of Contracts For Electric Service with Nucor Corporation, and (2) Approval of Tariff,* P.S.C. Case No. 2019-00365, Order, Ordering Paragraph No. 6 (August 17, 2020).

I. INTRODUCTION

1. Big Rivers is a rural electric cooperative corporation organized pursuant to KRS Chapter 279. Its full name is Big Rivers Electric Corporation. Its mailing address is P.O. Box 24, Henderson, Kentucky 42419-0024. Its street address is 201 Third Street, Henderson, Kentucky 42420. Its address for electronic mail service is regulatory@bigrivers.com. 807 KAR 5:001, Section 14(1).

2. Pursuant to 807 KAR 5:001, Section 14(1), Big Rivers states that this Application and the supporting exhibits, which are incorporated herein by reference, contain fully the facts on which the relief requested by Big Rivers is based.

3. A complete copy of the public portions of this Application has been sent to the Attorney General and counsel for Kentucky Industrial Utility Customers, Inc.

4. No tariff change is contemplated and so notice pursuant to 807 KAR 5:011 Section 8 is not required.

5. Big Rivers owns generating assets and purchases, transmits, and sells electricity at wholesale. Its principal purpose is to provide the wholesale electricity requirements of its three Member–Owner distribution electric cooperatives: Jackson Purchase Energy Corporation ("Jackson Purchase"), Kenergy Corp. ("Kenergy"), and Meade County Rural Electric Cooperative Corporation ("Meade County") (collectively, "the Member–Owners"). The three

Member–Owners in turn provide retail electric service to approximately 118,000 consumers/retail members located in 22 western Kentucky counties: Ballard, Breckenridge, Caldwell, Carlisle, Crittenden, Daviess, Graves, Grayson, Hancock, Hardin, Henderson, Hopkins, Livingston, Lyon, Marshall, McCracken, McLean, Meade, Muhlenberg, Ohio, Union, and Webster.

6. Big Rivers was incorporated in the Commonwealth of Kentucky on June 14, 1961, and hereby attests that it is currently in good standing in Kentucky. 807 KAR 5:001, Section 14(2).

II. BACKGROUND

A. Case Number 2020-00064

7. On February 28, 2020, Big Rivers filed an application requesting that the Commission authorize Big Rivers to modify its Member Rate Stability Mechanism ("MRSM") Tariff to provide a monthly bill credit, increase amortization of the Smelter Loss Mitigation ("SLM") Regulatory Assets, and take additional steps to mitigate the loss of 850 MW of load when two aluminum smelters left the Big Rivers system in 2013-2014, which represented more than one-half of its total native load, and restore Big Rivers' investment grade credit rating from all three major ratings agencies.[4]

[4] *In the Matter of: Electronic Application of Big Rivers Electric Corporation for Approval To Modify Its MRSM Tariff, Cease Deferring Depreciation Expenses, Establish Regulatory Assets, Amortize Regulatory Assets, and Other Appropriate Relief*, P.S.C. Case No. 2020-00064.

8. On May 29, 2020, Big Rivers, Kentucky Industrial Utility Customers, Inc. ("KIUC"), and the Attorney General of the Commonwealth of Kentucky, by and through the Office of Rate Intervention ("Attorney General"), filed a unanimous Settlement Agreement, Stipulation, and Recommendation ("Settlement Agreement"), wherein Big Rivers agreed, starting in 2021 and each calendar year thereafter (through 2043), and no later than February 28 of each calendar year, to provide the Commission, the Attorney General, and the KIUC with a report regarding nine identified matters.[5]

9. The Commission's final order in Case No. 2020-00064 ("June 25, 2020 Order") approved the Settlement Agreement, subject to modifications and deletions and clarified the forum in which the report would be presented, finding that Big Rivers "should file a formal docketed proceeding in the form of an annual application to revise its MRSM rates that should include all information laid out in the settlement and this Order."[6]

10. Additionally, the June 25, 2020 Order required Big Rivers to submit a minimum of two cost of service studies ("COSSs") based upon NARUC approved methods in this proceeding.[7]

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[5] Case No. 2020-00064, Settlement Agreement, Stipulation, and Recommendation, P.S.C Case No. 2020-00064 (May 29, 2020).

[6] Case No. 2020-00064, Order at page 21 (June 25, 2020).

[7] Case No. 2020-00064, Order at page 26 (June 25, 2020).

B. Case Number 2019-00435

11. On February 7, 2020, Big Rivers filed an application pursuant to KRS 278.183, seeking approval of its proposed 2020 Environmental Compliance Plan ("the 2020 ECP" or "the ECP"), which included several projects to ensure Big Rivers' coal-fired generation units and the City of Henderson's Station Two are compliant with applicable federal, state, and local environmental laws or regulations.[8] Big Rivers also sought additional relief, including authorization to establish a regulatory asset for the reasonable expenses incurred in developing and pursuing the relief requested in that case and the recovery of those expenses over a three year period via the Environmental Surcharge mechanism ("ES" or "ESM") or to defer those costs for possible recovery in a future proceeding.[9]

12. On August 6, 2020, the Commission found that Big Rivers had established that the costs to prepare and prosecute its 2020 Environmental Compliance Plan were an expense resulting from a statutory or administrative directive and appropriate for deferral. The Commission also found Big Rivers should be allowed to defer the actual costs of preparing and prosecuting the case,

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[8] *In the Matter of: Electronic Application of Big Rivers Electric Corporation for Approval of its 2020 Environmental Compliance Plan, Authority to Recover Costs Through a Revised Environmental Surcharge and Tariff, the Issuance of a Certificate of Public Convenience and Necessity For Certain Projects, and Appropriate Accounting and Other Relief,* P.S.C. Case No. 2019-00435.

[9] *Id*. Application at page 2 (Feb. 7, 2020).

net any amounts included in its base rates or otherwise capitalized as part of a project.[10]

13. The Commission's Final Order required Big Rivers to submit information regarding this regulatory asset for Commission review as part of this proceeding.[11]

C. <u>Case Number 2019-00365</u>

14. On September 26, 2019, Big Rivers and Meade County RECC submitted their joint application, seeking an order from the Commission approving: 1) the retail contract for electric service between Meade County and Nucor Corporation ("Nucor") executed September 9, 2019 (the "Retail Agreement"); 2) a related Wholesale Agreement between Big Rivers and Meade County executed September 18, 2019 (with the Retail Agreement collectively the "Nucor Contracts"); and 3) the establishment of a modified version of the Large Industrial Customer Expansion ("LICX") tariff that was originally in effect from 2000 through 2014.[12]

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[10] Case No. 2019-00435, Order, at page 4 (August 6, 2020).

[11] *Id.*, Ordering Paragraph 16 ("BREC shall file information regarding the regulatory asset associated with BREC's costs of preparing and prosecuting this case for Commission review as part of its next annual filing to adjust its Member Rate Stability Mechanism rates").

[12] *In the Matter of: Electronic Joint Application of Big Rivers Electric Corporation and Meade County Rural Electric Corporation and Meade County Rural Electric Cooperative Corporation for Approval of Contracts for Electric Service with Nucor Corporation and Application of Big Rivers Electric Corporation for Approval of Tariff*, P.S.C. Case No. 2019-00365.

15. Commission approval of the Nucor Contracts and the LICX tariff was necessary to facilitate the construction of a new Nucor facility in Brandenburg, Meade County, Kentucky that significantly bolsters the Commonwealth's economy by creating 400 direct jobs (at an annual average wage of $72,000), over 2,600 indirect jobs, $189 million in annual labor income, $14.3 million in annual state and local tax revenues, and approximately $360 million in annual gross domestic product ("GDP") once fully operational.[13]

16. On August 17, 2020, the Commission granted Big Rivers and Meade County RECC the relief they sought and directed them to file, as part of Big Rivers' annual filing required in Case No. 2020-00064, information detailing the financial impacts of the Nucor retail service agreement and the impact the Nucor load has had on Big Rivers' credit ratings.[14]

17. Through this filing, Big Rivers seeks to comply with the Commission's Orders in the above described three proceedings.

III. <u>RESPONSE TO THE JUNE 25, 2020 ORDER</u>

18. In compliance with the Commission's June 25, 2020 Order, Big Rivers is filing information and documents related to: (1) matters identified in

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[13] *In the Matter of: Electronic Joint Application of Big Rivers Electric Corporation and Meade County Rural Electric Corporation and Meade County Rural Electric Cooperative Corporation For (1) Approval of Contracts For Electric Service with Nucor Corporation, and (2) Approval of Tariff*, P.S.C. Case No. 2019-00365, Application, Direct Testimony of Robert W. Berry, Exhibit Berry-4 (Sept. 26, 2019).

[14] *Id.*, Ordering Paragraph No. 6 (Aug. 17, 2020).

the Settlement Agreement as set forth in the Order;[15] (2) Big Rivers' current Member Equity Balance and the minimum required by its loan covenants;[16] (3) the reasonableness of any 2020 decommissioning costs;[17] and (4) detailed descriptions of all actions Big Rivers has taken to minimize decommissioning costs.[18]

19. The Settlement Agreement identified nine categories of information to be included in this annual proceeding:

a. Year-end TIER calculation for the prior calendar year;

b. The amount of the New TIER Credit that will flow through the MRSM Rider during the following twelve months;

c. The amount charged to depreciation and amortization expense for recovery of the SLM Regulatory Assets in the prior calendar year, that will reduce the SLM Regulatory Assets balance;

d. Status of the amortization of the SLM Regulatory Assets;

e. Interest savings gained (annualized) once investment grade ratings are received from at least two of the three rating agencies;

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[15] Case No. 2019-00064, Order at page 16 (June 25, 2020) (directing Big Rivers to "file by February 28, an application to adjust its MRSM rates, containing at minimum the information contained in the Settlement [Agreement], as modified herein").

[16] *Id.* at page 21.

[17] *Id.* at page 21.

[18] *Id.*

f. Status of and expected decommissioning costs of Coleman Station and Reid Station Unit 1, and the total and Big Rivers' estimated share of the decommissioning costs associated with Station Two; and

g. A copy of any proposal to decommission Coleman Station, Reid Station Unit 1, and Station Two that was awarded in the prior year.[19]

20. The Direct Testimony of Paul G. Smith attached to this Application as Exhibit A responds to the first seven subparts (a. through e.) and provides Big Rivers' current Member Equity Balance and the minimum required by its loan covenants.[20]

21. The Direct Testimony of Michael T. Pullen attached to this Application as Exhibit B responds to the remaining two subparts (f. and g.). Additionally, Mr. Pullen's Direct Testimony describes the actions Big Rivers has taken to minimize decommissioning costs and supports the reasonableness of the decommissioning expenses.[21]

22. The decommissioning of Coleman Station, Reid Unit 1, and Station Two are currently at various stages, as fully discussed in Mr. Pullen's Direct Testimony. However, Big Rivers and its expert consultants have and will continue to examine each decommissioning project to ensure it is a reasonable,

[19] June 25, 2020 Order at page 16

[20] June 25, 2020 Order at page 21.

[21] *Id.*

necessary, and cost-effective course of action to promote the best interests of Big Rivers' Member-Owners, consistent with Big Rivers' obligations under law, including increasingly-stringent environmental standards and restrictions.

IV. NOTICE OF FILING COST OF SERVICE STUDIES

23. In further compliance with the Commission's June 25, 2020, Order in Case No. 2020-00064,[22] Big Rivers gives notice of filing two fully–allocated cost of service studies based upon the NARUC-approved methods.

24. On behalf of Big Rivers, John Wolfram, Principal of Catalyst Consulting LLC prepared the COSSs, which are attached as exhibits to his Direct Testimony attached to this Application as Exhibit C.

V. RESPONSE TO THE COMMISSION'S AUGUST 6, 2020 ORDER

25. The Commission found Big Rivers should be allowed to defer the actual costs of preparing and prosecuting the 2020 Environmental Compliance Plan case, net of any amounts included in its base rates or otherwise capitalized as part of a project. Details of the total actual expenses incurred by Big Rivers to develop and prosecute Case No. 2019-00435 are provided in the Direct Testimony of Mr. Paul G. Smith.

26. As Mr. Smith's Direct Testimony explains, these costs stem from the retention of legal counsel and a regulatory expert to assist Big Rivers in

[22] June 25, 2020 Order at page 26.

preparing and prosecuting the 2020 ECP case, Case No. 2019-00435, which was a necessary component of Big Rivers' environmental compliance activities. Big Rivers' 2020 ECP included several projects to ensure Big Rivers' coal-fired generation units are compliant with applicable federal, state and local environmental laws. The ECP case sought Commission approval not only of Big Rivers' 2020 ECP, but also sought authority to recover the costs of the plan through its Environmental Surcharge tariff, issuance of certificates of public convenience and necessity for certain projects, and appropriate accounting and other relief.

27. For preparation of its case filings, Big Rivers turned to regional counsel at Dinsmore & Shohl LLP ("Dinsmore"). This firm has significant expertise representing Big Rivers before the Commission, they are located near Big Rivers' and the Commission's offices.

28. Other than legal fees, the only additional expense deferred in the regulatory asset was for Catalyst Consulting LLC to sponsor testimony which addressed, among other things, the estimated cost and rate impact of the proposed 2020 ECP, the Environmental Surcharge tariff, and amendments to the monthly ES report forms that were necessary to reflect the ECP. As with Big Rivers' legal fees, Catalyst Consulting LLC's hourly rates are reasonable, and all Catalyst Consulting's charges for the ECP proceeding are supported by detailed invoices. Further, as Mr. Smith's Direct Testimony explains, the actual costs incurred were significantly lower than originally estimated.

29. Ratemakers have regularly permitted the recovery of costs where the utility's actions leading to those costs were prudent "based on all it knew or should have known at the time" they were incurred.[23] The legal and expert fees were necessary in order for Big Rivers to secure the regulatory approval of its ECP and so necessary for Big Rivers to meet its environmental compliance obligations. For this reason and those stated above, the expenditures were necessary, prudent, and reasonable at the time they were made.[24]

VI. RESPONSE TO THE COMMISSION'S AUGUST 17, 2020 ORDER

30. In its final Order in Case No. 2019-00365, the Commission granted Big Rivers and Meade County the relief they sought and directed them to file, as part of this proceeding, information detailing the financial impacts of the Nucor retail service agreement and the impact the Nucor load has had on Big Rivers' credit ratings.[25]

31. While Nucor has not completed construction of its new Brandenburg, Kentucky facility and, therefore, has not begun operations, Meade

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[23] *In re Western Mass. Elec. Co.*, 80 P.U.R. 4th 479, 520 (Mass. 1986); *see also Duquesne Light Co.*, 488 U.S. 299 (recognizing prudent investment test); *Violet v. FERC*, 800 F.2d 280 (1st Cir. 1987) (discussing application of the prudent investment test in Rhode Island and Massachusetts).

[24] *See Duquesne Light Co.,* 488 U.S. at 317 (Scalia, concurring) (defining "prudent investment" as "capital reasonably expended to meet the utilities legal obligations to assure adequate service").

[25] *In the Matter of: Electronic Joint Application of Big Rivers Electric Corporation and Meade County Rural Electric Corporation and Meade County Rural Electric Cooperative Corporation For (1) Approval of Contracts For Electric Service with Nucor Corporation, and (2) Approval of Tariff*, P.S.C. Case No. 2019-00365, Order, Ordering Paragraph No. 6 (August 17, 2020).

County has provided service to the Nucor construction site. Paul G. Smith's Direct Testimony provides the confidential details of the 2020 billing for these services to Nucor.

32. Securing the Nucor load has already had a positive impact on Big Rivers' credit ratings. In fact, Big Rivers recently obtained its second investment grade credit rating. Mr. Smith's Direct Testimony also discusses Moody's Investor's Service ("Moody's") recent Rating Action, in which Moody's assigned a Baa3 rating to Big Rivers' $83.3 million senior secured 10-year term loan agreement with National Rural Utilities Cooperative Finance Corporation ("CFC").[26] Moody's Rating Action noted, among other things: "The rating action reflects Moody's views about Big Rivers' significant progress in securing replacement loads to create better balance between its available capacity and profile, obtaining Kentucky Public Service Commission (KPSC) approval for rate-neutral recovery of costs associated with its sizable regulatory assets and executing to reduce interest expense and mitigate refinancing risk …."[27]

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[26] *In the Matter of: Electronic Application of Big Rivers Electric Corporation For Approval To Issue Evidences of Indebtedness,* P.S.C. Case No. 2020-00291, Order (Nov. 19, 2020) (approving Big Rivers' execution of the CFC Senior Secured Term Loan Agreement).

[27] *See* Exhibit Smith-5 to the Direct Testimony of Paul G. Smith.

33. Receiving a second investment grade rating has also resulted in Big Rivers recognizing significant annual interest savings under the 2020 CFC Revolving Credit Facility,[28] as fully discussed in Mr. Smith's Direct Testimony.[29]

VII. BIG RIVERS' PROPOSED ADJUSTMENTS AND ALTERATIONS

34. The Commission's June 25, 2020, Order also stated that this annual proceeding would allow Big Rivers "to propose adjustments and alterations as it deems necessary."[30] Big Rivers is not proposing any adjustments or alterations to its MRSM credit in this proceeding.

35. However, as fully explained in Mr. Smith Direct Testimony, and in accordance with the Commission's Order in Case No. 2020-00064, the regulatory liability account balance exceeds the required $9 million minimum; accordingly, Big Rivers proposes to use the regulatory liability amount in the excess of the $9 million minimum, or $11.0 million, to further reduce the SLM Regulatory Assets in 2021.

36. Additionally, Big Rivers has filed an MRSM Schedule with the Commission since January 2010, as noted in the Direct Testimony of William Steven Seelye in Case No. 2007-00455 (the "Unwind" case), to show the monthly amounts passed through the MRSM. Big Rivers was not ordered to make this

[28] *In the Matter of: Electronic Application of Big Rivers Electric Corporation For Approval To Issue Evidences of Indebtedness*, P.S.C. Case No. 2020-00129, Order (May 8, 2020) (approving the 2020 CFC Revolving Credit Facility).

[29] *See* Exhibit Smith-6 to the Direct Testimony of Paul G. Smith.

[30] Case No. 2020-00064, Order at Page 21 (June 25, 2020).

filing. The amount that will now flow through the MRSM annually is based on the new TIER Credit that was approved in Case No. 2020-00064. Pursuant to the Commission's final Order in that case, Big Rivers will now provide that annual amount to the Commission, in the compliance filing Big Rivers is to make each year by February 28. Since the Commission will have an opportunity to review the new TIER Credit amount each year, and since the monthly amount will be 1/12th of the annual approved amount, Big Rivers intends to discontinue filing the monthly MRSM Schedule, unless the Commission directs otherwise.

WHEREFORE, Big Rivers requests an Order from the Commission:

1. Authorizing Big Rivers to use the regulatory liability amount in excess of $9 million, or $11.0 million, to reduce the SLM Regulatory Assets in 2021;

2. Authorizing Big Rivers to amortize over three years the regulatory asset for the reasonable expenses incurred in developing and pursuing the relief requested before the Commission in Case No. 2019-00435, Big Rivers' 2020 ECP case, and to recover those amortized amounts through its Environmental Surcharge tariff; and

4. Granting Big Rivers all other relief to which it may appear entitled.

On this the 26th day of February, 2021

Respectfully submitted,

BIG RIVERS ELECTRIC CORPORATION

/s/ Tyson Kamuf

____

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Counsel to Big Rivers Electric Corporation

BIG RIVERS ELECTRIC CORPORATION

ELECTRONIC APPLICATION OF
BIG RIVERS ELECTRIC CORPORATION
ANNUAL REPORT ON MRSM CREDIT
CASE NO. 2021-00061

VERIFICATION

I, Paul G. Smith, Chief Financial Officer for Big Rivers Electric Corporation, hereby state that I have read the foregoing Application and that the statements contained therein are true and correct to the best of my knowledge and belief, on this the 26th day of February, 2021.

Paul Smith

Paul G. Smith
Chief Financial Officer
Big Rivers Electric Corporation

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Paul G. Smith on this the 26th day of February, 2021.

Kathryn Roley, KYNP16841
Notary Public, Kentucky State at Large
My Commission Expires October 31, 2024

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DIRECT TESTIMONY

OF

PAUL G. SMITH
CHIEF FINANCIAL OFFICER

ON BEHALF OF

BIG RIVERS ELECTRIC CORPORATION

FILED: February 26, 2021

Application Exhibit A

DIRECT TESTIMONY

OF

PAUL G. SMITH

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DIRECT TESTIMONY

OF

PAUL G. SMITH

I. INTRODUCTION

Q. Please state your name, business address and occupation.

A. My name is Paul G. Smith, and my business address is 201 Third Street, Henderson, Kentucky 42420. I am the Chief Financial Officer ("CFO") for Big Rivers Electric Corporation ("Big Rivers").

Q. Please summarize your education and professional experience.

A. I received a Bachelor of Science degree in Industrial Management from Purdue University and a Masters of Business Administration degree, with honors, from the University of Chicago. I am a Certified Public Accountant in the State of Ohio and a member of the American Institute of Certified Public Accountants. I am a past member of the Edison Electric Institute ("EEI") Economic Regulation and Competition Committee and the EEI Budgeting and Financial Forecasting Committee.

I began my career in 1982 as a public accountant in the Chicago office of Deloitte & Touche, and from 1984 to 1987 in the Indianapolis office of Crowe, Chizek & Co. Beginning in 1987, I held various analyst and managerial positions with Duke Energy Corporation, and its predecessor companies including Cinergy Corp. ("Cinergy") and Public Service Indiana, in Budgets and Forecasts, Rates and Regulatory Affairs, Investor Relations, and the International Business Unit. Beginning in 2001, I was appointed to various executive level positions, including General Manager of Budgets and Forecasts with responsibility for Cinergy's financial planning and analysis department, Vice President of Rates with responsibility for all state and federal regulated rate matters including revenue requirements, cost–of–service and rate design for Duke Energy Kentucky, Inc. and Duke Energy Ohio, Inc., and Vice President of Retail Marketing with responsibility for all activities to launch a start-up, competitive retail energy business.

In 2012, I joined NextEra Energy Transmission, the competitive transmission development subsidiary of NextEra Energy, Inc., as Senior Director of Business Management. My responsibilities included managing all financial activities for the competitive transmission business, including accounting and financial reporting, budgeting and financial planning, and corporate development analytics. In addition, I was responsible for the compliance function and directing the preparation of state, Regional Transmission Organization, and Federal Energy Regulatory Commission ("FERC") revenue requirement filings.

In 2018, I accepted the position of CFO at Big Rivers.

Q. Please summarize your duties at Big Rivers.

A. As CFO, I am responsible for all financial, regulatory, strategic planning and risk management activities. Such activities include accounting and financial reporting, payroll, budgets, finance, tax, rates and regulatory affairs, risk management and strategic planning.

Q. Have you previously testified before the Kentucky Public Service Commission ("Commission")?

A. Yes. Most recently, I submitted written and oral testimony on behalf of Big Rivers in Case No. 2019-00269[1] in which Big Rivers requests that the Commission enforce the series of contracts between Big Rivers and the City of Henderson and the City of Henderson Utility Commission related to the William L. Newman Station Two generating plant and associated facilities, and in Case No. 2018-00146.[2] I also submitted testimony on behalf of Big Rivers in Case No. 2020-00183[3], in which Big Rivers sought and obtained approval of solar power purchase contracts and Case No. 2019-00435[4] in

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[1] *In the Matter of: Application of Big Rivers Electric Corporation for Enforcement of Rate and Service Standards* (filed July 31, 2019).

[2] *In the Matter of: Notice of Termination of Contracts and Application of Big Rivers Electric Corporation for a Declaratory Order and for Authority to Establish a Regulatory Asset* (Ky. P.S.C. Aug. 29, 2018).

[3] *In the Matter of: Electronic Application of Big Rivers Electric Corporation for Approval of Solar Power Contracts* (filed June 24, 2020).

[4] *In the Matter of: Application of Big Rivers Electric Corporation for Approval of its 2020 Environmental Compliance Plan, Authority to Recover Costs Through a Revised Environmental Surcharge and Tariff, the Issuance of a Certificate of Public Convenience and Necessity for Certain Projects, and Appropriate Accounting and Other Relief* (filed Feb. 7, 2020).

which the Company sought and obtained an order from the Commission approving its 2020 Environmental Compliance Plan, and authority to recover costs through a revised Environmental Surcharge (the "2020 ECP Case") and testified in support of Big Rivers' Application to modify its MRSM Tariff, Times Interest Earned Ratio ("TIER") Credit and other related relief, in Case No. 2020-00064. I submitted testimony in support of the Joint Application filed by Big Rivers and Meade County Rural Electric Cooperative Corporation ("Meade County RECC") in Case No. 2019-00365,[5] in which the Commission approved contracts to provide electric service to a new facility to be developed by Nucor Corporation ("Nucor") in Brandenburg, Meade County, Kentucky. I also responded to requests for information in Case No. 2020-00153[6] and Case No 2020-00291,[7] in which Big Rivers sought and obtained, authorization to issue evidence of indebtedness.

I have also testified on behalf of Duke Energy Kentucky, Inc., including in Case No. 2006-00172,[8] in which Duke sought an increase in

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[5] *In the Matter of: Electronic Joint Application of Big Rivers Electric Corporation and Meade County Rural Electric Cooperative Corporation for (1) Approval of Contracts for Electric Service with Nucor Corporation; and (2) Approval of Tariff* (filed Sept. 26, 2019).

[6] *In the Matter of: Electronic Application of Big Rivers Electric Corporation For Approval to Issue Evidences of Indebtedness*, Responses to Commission Staff's Initial Request for Information dated June 28, 2020 (filed July 6, 2020).

[7] *In the Matter of: Electronic Application of Big Rivers Electric Corporation For Approval to Issue Evidences of Indebtedness*, Responses to Commission Staff's Initial Request for Information dated October 7, 2020 (filed Oct. 12, 2020).

[8] *In the Matter of: An Adjustment of the Electric Rates of the Union Light, Heat and Power Company D/B/A Duke Energy Kentucky, Inc.* (filed Dec. 21, 2006).

rates, and in Case No. 2008-00495,[9] in which Duke sought approval of energy efficiency programs and an energy efficiency rider. Additionally, I have testified before The Public Utilities Commission of Ohio, the Indiana Utility Regulatory Commission, and FERC. My professional experience is summarized in Exhibit Smith-1.

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

A. The purpose of my testimony is: (i) to provide information pursuant to Ordering Paragraph 10 of the Commission's June 25, 2020, Order in Case No. 2020-00064[10] ("the June 25, 2020 Order"); (ii) to provide information pursuant to Ordering Paragraph No. 16 of the Commission's August 6, 2020, Order in Case No. 2019-00435 and to renew Big Rivers' request for approval to amortize the regulatory asset established for the reasonable expenses incurred in developing and pursuing the relief requested in the Environmental Compliance Plan case;[11] (iii) to provide information pursuant to Ordering Paragraph No. 6 of the Commission's August 17, 2020, Order in

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[9] *In the Matter of: Application of Duke Energy Kentucky, Inc. for Approval of Energy Efficiency Plan including an Energy Efficiency Rider and Portfolio of Energy Efficiency Programs*, Order (Jan. 29, 2010).

[10] *In the Matter of: Electronic Application of Big Rivers Electric Corporation for Approval to Modify Its MRSM Tariff, Cease Deferring Depreciation Expense, Establish Regulatory Assets, Amortize Regulatory Assets, and Other Appropriate Relief*, Order (June 25, 2020).

[11] *In the Matter of: Electronic Application of Big Rivers Electric Corporation for Approval of its 2020 Environmental Compliance Plan, Authority to Recover Costs Through a Revised Environmental Surcharge and Tariff, the Issuance of a Certificate of Public Convenience and Necessity For Certain Projects, and Appropriate Accounting and Other Relief*, Order (Aug. 6, 2020).

Case No. 2019-00365;[12] (iv) to introduce the two fully–allocated cost–of–service studies also provided pursuant to the aforementioned June 25, 2020 Order;[13] and (v) to present Big Rivers' proposal regarding the use of the regulatory liability balance in excess of the $9 million minimum to reduce the balance of SLM Regulatory Assets as approved in Case No. 2020-00064.

Q. Are you sponsoring any exhibits?

A. Yes. The following exhibits were prepared by me or under my supervision:

- Exhibit Smith-1: Professional Summary
- Exhibit Smith-2: 2020 Year-End TIER Credit Calculation and Amount of the New TIER Credit to Flow Through the MRSM Rider During 2021
- Exhibit Smith-3: Allocation of Monthly Bill Credit to Customer Classes
- Exhibit Smith-4: 2020 Amount Charged to Depreciation and Amortization Expense for Recovery of SLM Regulatory Assets
- Exhibit Smith-5: Moody's Investors Service Rating Action Dec. 2, 2020

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[12] *In the Matter of: Electronic Joint Application of Big Rivers Electric Corporation and Meade County Rural Electric Corporation and Meade County Rural Electric Cooperative Corporation For (1) Approval of Contracts For Electric Service with Nucor Corporation, and (2) Approval of Tariff*, P.S.C. Case No. 2019-00365, Order (Aug. 17, 2020).

[13] *In the Matter of: Electronic Application of Big Rivers Electric Corporation for Approval to Modify Its MRSM Tariff, Cease Deferring Depreciation Expense, Establish Regulatory Assets, Amortize Regulatory Assets, and Other Appropriate Relief*, P.S.C. Case No. 2020-00064, Order at 26 (June 25, 2020).

- Exhibit Smith-6: Interest Savings Attributable to Investment Grade Credit Rating
- Exhibit Smith-7: National Rural Utilities CFC Pricing Change Notice
- Exhibit Smith-8: ECP Case Expense List

II. JUNE 25, 2020, ORDER IN CASE NO. 2020-00064

Q. Please identify the information you will be providing pursuant to the Ordering Paragraph 10 of the Commission's June 25, 2020, Order in Case No. 2020-00064.

A. I will provide information specifically addressing the first five matters identified in the May 29, 2020, Settlement Agreement among Big Rivers, the Kentucky Industrial Utility Customers, Inc. and the Office of the Attorney General of the Commonwealth of Kentucky, as set forth in the Commission's June 25, 2020 Order:[14]

a. Year-end TIER calculation for the prior calendar year;

b. The amount of the New TIER Credit that will flow through the MRSM Rider during the following twelve months;

c. The amount charged to depreciation and amortization expense for recovery of the SLM Regulatory Assets in the prior calendar year, that will reduce the SLM Regulatory Assets balance;

[14] Case No. 2020-00064, Order at page 16 (June 25, 2020).

d. Status of the amortization of the SLM Regulatory Assets; and

e. Interest savings gained (annualized) once investment grade ratings are received from at least two of the three rating agencies.

I will also provide Big Rivers' current Member equity balance and the minimum required by its loan covenants as specified in the June 25, 2020 Order.[15]

Q. What is the Year-end TIER calculation for the prior calendar year?

A. As shown on Exhibit Smith-2, the 2020 pre-TIER Credit net margins are \$43.5 million, which equates to a TIER of 2.28. In accordance with the Commission's Order in Case No. 2020-00064, such financial results prompt the recording of a New TIER Credit of \$33.3 million, resulting in reported net margins of \$10.2 million which equates to the targeted approved TIER of 1.30.

Q. Please identify the amount of the New TIER Credit that will flow through the MRSM Rider during the following twelve months.

A. In accordance with the Commission's Order in Case No. 2020-00064, \$20.0 million (60%) of the New TIER Credit will be recorded as a regulatory liability to reduce the SLM Regulatory Assets, and \$13.3 million (40%) of the New TIER Credit will flow through the MRSM Rider in 2021.

[15] *Id.* at page 21.

As shown on Exhibit Smith-3, the amount of the New TIER Credit to flow through the MRSM Rider in 2021 is to be credited to Rural and Large Industrial customers based on a two-part allocation: 1) the first $700,000 is assigned to Rural customers, and 2) the balance of the New TIER Credit is allocated to each customer class based on their respective 2021 revenue. Of the total $13.3 million MRSM Rider bill credits in 2021, $10,497,290 will be credited to Rural customers and $2,836,224 will be credited to Large Industrial customers. Accordingly, $1,111,126 (Rural: $874,774 and Large Industrial: $236,352) will be credited each month in 2021.

Q. Please provide the amount charged to depreciation and amortization expense for recovery of the SLM Regulatory Assets in the prior calendar year, which will reduce the SLM Regulatory Assets balance.

A. Based on the 2020 New TIER Credit calculation, as referenced above, $20,000,272 was charged to amortization expense for recovery of the SLM Regulatory Assets. This amount is currently recorded as a regulatory liability per Case No. 2020-00064. In accordance with the Commission's Order, the regulatory liability account balance exceeds the required $9 million minimum; accordingly, Big Rivers proposes to use the regulatory liability amount in excess of $9 million, or $11.0 million, to reduce the SLM Regulatory Assets in 2021.

Q. Please explain the status of the amortization of the SLM Regulatory Assets.

A. Amortization of the SLM Regulatory Assets will begin in January 2021. A one-time amortization of the SLM Regulatory Assets will be recorded in January 2021 for $84,944,959, which represents 80 percent of Member equity in excess of the amount required under Big Rivers' loan covenants. An additional $13,044,248 will be charged to amortization expense during 2021 to capture the annual amortization to be recorded each year through 2043, or until the remainder of the SLM Regulatory Assets are fully amortized. The December 2020 balance of each of the SLM Regulatory Assets is included in Exhibit Smith-4.

Q. Please explain the annual interest savings realized by receiving an investment grade rating from at least two of the three rating agencies.

A. On December 2, 2020, Moody's Investors Service, Inc. ("Moody's") assigned Big Rivers an investment grade rating, Baa3 (See Moody's Rating Action report attached hereto Exhibit Smith –5). With the credit rating upgrade, Big Rivers has received an investment grade credit rating from two of the three rating agencies, thereby making the company eligible for reduced fees on the CFC Revolving Credit Facility. Based on the discounted fee structure, Big Rivers will recognize annual interest savings of approximately $157,500.

Please see Exhibit Smith-6 showing Big Rivers' Interest Savings and Exhibit Smith-7, a copy of National Rural Utilities CFC Pricing Change Notice.

Q. Please identify Big Rivers' current Member equity balance and the minimum required by its loan covenants.

A. At December 31, 2020, Big Rivers' Member equity balance is $531,538,511 and the minimum required by its loan covenants is $425,357,313. Of the $106.2 million excess equity, $84.9 million (80%) will be recorded as a reduction in the SLM Regulatory Asset balance in 2021 in accordance with the Order in 2020-00064

III. <u>AUGUST 6, 2020, ORDER IN CASE NO. 2019-00435</u>

Q. What information and exhibits are you sponsoring in compliance with the Ordering Paragraph No. 16 of the Commission's August 6, 2020 order?

A. I am presenting information regarding the regulatory asset associated with Big Rivers' costs of preparing and prosecuting that Environmental Compliance Plan proceeding, specifically the nature of the costs Big Rivers seeks to recover and a list of those costs described in the ECP Case Expense List attached hereto as Exhibit Smith-8.

Q. What relief did Big Rivers seek in Case No. 2019-00435?

A. In Case No. 2019-00435, Big Rivers presented its 2020 Environmental Compliance Plan. In addition to proposing several projects to ensure compliance with applicable federal, state, and local environmental laws or regulations, Big Rivers sought authorization to implement deferred accounting treatment of the actual expenditures incurred to prepare and prosecute the case. More specifically, Big Rivers requested authority to establish a regulatory asset for its actual costs associated with preparing and prosecuting the Environmental Compliance case pursuant to KRS 278.183, to amortize the costs over three years, and to recover the costs through the environmental surcharge. This method was approved as part of Big Rivers' 2012 Environmental Compliance in Case No. 2012-00063.[16] Alternatively, Big Rivers requested the Commission grant it the authority to establish a regulatory asset to defer the costs for possible recovery if approved by the Commission in a future proceeding.

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[16] *In the Matter of: Application of Big Rivers Electric Corporation for Approval of its 2012 Environmental Compliance Plan, for Approval of its Amended Environmental Cost Recovery Surcharge Tariff, for Certificates of Public Convenience and Necessity, and for Authority to Establish a Regulatory Account*, P.S.C. Case No. 2012-00063, Order (Oct. 1, 2012).

Q. Did the Commission grant Big Rivers authority to implement the desired accounting treatment?

A. The Commission authorized Big Rivers to establish a regulatory asset for the costs associated with its preparation and prosecution of the 2020 Environmental Compliance Plan case and granted the Company's alternative proposal to defer these costs for future recovery.

Q. Did the Commission's order contain additional findings regarding the deferred recovery relevant to this proceeding?

A. Yes, the Commission found that Big Rivers should submit information regarding the regulatory asset for Commission review as part of this filing and required such submission in Ordering Paragraph No. 16 of its final order in the Environmental Compliance Plan proceeding.[17]

Q. What is the nature of the costs Big Rivers seeks to recover?

A. As noted in Case No. 2019-00435, the costs stem from the retention of legal counsel and a regulatory expert to assist Big Rivers in evaluating compliance options, and additional expenses prosecuting the matter.

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[17] *Id.*

Q. What experts did Big Rivers retain to assist it in the Environmental Compliance Plan case?

A. To assist Big Rivers in developing and pursuing Commission approval of its ECP, Mr. John Wolfram, Principal with Catalyst Consulting LLC sponsored testimony that addressed, among other things, the estimated cost and rate impact of the proposed 2020 Environmental Compliance Plan, the environmental surcharge tariff, and the monthly reporting form amendments that were necessary to reflect the 2020 ECP.[18] Big Rivers also relied on the law firm of Dinsmore & Shohl to help it prepare and prosecute the case.

Q. What are the total actual expenses incurred by Big Rivers to develop and prosecute the Environmental Compliance Plan case, Case No. 2019-00435?

A. In my Direct Testimony in Case No. 2019-00435, I estimated the costs to prepare the application and prosecute the case at $1.1 million.[19] As a result of receiving less discovery than in Big Rivers' previous Environmental

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[18] As noted in the ECP proceeding, while Mr. Samuel E. Yoder, P.E. of Burns & McDonnell and Mr. Michael T. Hoydick, Director of Technology & Sales for Amec Foster Wheeler Industrial Power Company, Inc. both provided testimony, they primarily assisted Big Rivers with evaluation, planning, design, and other preliminary work for the construction of the projects. Big Rivers did not defer these costs in the regulatory asset.

[19] Case No. 2019-00435, Direct Testimony of Paul G. Smith (Application Exhibit F) at page 39.

Compliance Plan case, the actual costs totaled only $289,407. (See ECP Case Expense List attached hereto as Exhibit Smith-8)

Q. Are these costs reasonable?

A. Yes. Big Rivers was required to file Case No. 2019-00365 to obtain the authority necessary to implement the projects in Big Rivers 2020 ECP and to recover the costs of those projects through its environmental surcharge. As explained in Case No. 2019-00435, the projects in the 2020 ECP were reasonable options for Big Rivers to comply with environmental regulations. Retaining experts and counsel to develop and prosecute the case were therefore necessary costs incurred to comply with environmental regulations.

Q. What is your proposal with respect to this regulatory asset?

A. Because the costs of preparing and prosecuting the 2020 ECP case were a necessary component of the projects needed to comply with environmental regulations, I propose that the Commission allow Big Rivers to amortize those costs over 3-years and to recover those costs through the environmental surcharge, just as the Commission allowed with the costs of Big Rivers' 2012 ECP case. Alternatively, Big Rivers requests the authority to include the 2020 ECP regulatory asset in the list of regulatory assets in Big Rivers' MRSM tariff that Big Rivers is amortizing through existing rates.

IV. AUGUST 17, 2020, ORDER IN CASE NO. 2019-00365

Q. What relief did Big Rivers seek in Case No. 2019-00365?

A. In Case No. 2019-00365, Big Rivers and Meade County RECC filed a joint application seeking approval of a retail contract for electric service between Meade County RECC and Nucor and a related wholesale letter agreement between Big Rivers and Meade County RECC, to facilitate the construction of a new Nucor facility in Bradenburg, Kentucky. Big Rivers also sought approval to establish a modified version of the Large Industrial Customer Expansion ("LICX") tariff that was in effect from 2000 through 2014.

Q. Did the Commission grant the relief Big Rivers sought?

A. Yes, and the Commission made the proposed LICX Tariff effective on and after the date of entry of its final order, August 17, 2020.

Q. How does the final order in Case No. 2019-00435 relate to this proceeding?

A. Ordering Paragraph 6 of the final order in that case stated: "BREC and Meade County RECC shall file as part of BREC's annual filing required by ordering paragraph 10 of the Commission's June 25, 2020 Ordering Case No. 2020-00064 information detailing the financial impacts of the Nucor retail electric service agreement and the impact the Nucor load has had on BREC's credit ratings."

Q What were the financial impacts of the Nucor retail service agreement in 2020?

A. The Nucor facility in Brandenburg is still under construction and has not yet begun taking service under the retail service agreement approved in Case No. 2019-00365. That agreement will take effect shortly before or at the time of the Commercial Operation Date of the Nucor facility. Until then, during the construction phase, Nucor takes service through a Meade County RECC tariff under Big Rivers' Rural tariff. In 2020, Meade County RECC billed Nucor for [redacted] and [redacted]. Including initial temporary service, construction trailers, and primary metering, Meade County RECC billed Nucor a total amount of [redacted].

Q. **What impact has the Nucor load had on Big Rivers' credit ratings in 2020?**

A. As discussed above, on December 2, 2020, Moody's assigned Big Rivers an investment grade rating, Baa3 (See Moody's Rating Action report attached hereto as Exhibit Smith–5). The report's "Ratings Rationale" specifically noted that the long term contract with Nucor Corporation (Nucor: Baa1 stable) "will add about 200 MW of full-requirements load, effectively establishing Nucor as one of Meade County's [Meade County Rural Electric Cooperative Corporation] members." Moody's report concluded, "When these demand-side strategies are combined with the aforementioned supply-side decisions that ultimately reduce net available capacity by 435 MW, they collectively create better balance between Big Rivers' future available generation capacity and load demand requirement." Moody's specifically included the Commission's approval of the Nucor agreement in the report's discussion of "credit supportive decisions by the KPSC."

V. COST OF SERVICE STUDIES[20]

Q. Has Big Rivers prepared or had prepared fully allocated cost service studies based upon NARUC approved methods pursuant to the June 25, 2020 Order in Case No. 2020-00064?

A. Yes, Mr. John Wolfram of Catalyst Consulting Inc. has prepared two cost of service studies, which are attached as exhibits to the Direct Testimony of John Wolfram, Application Exhibit C.

VI. CONCLUSION

Q. Please summarize the relief requested by Big Rivers in this proceeding?

A. As outlined above and in accordance with the Commission's Order, the regulatory liability account balance exceeds the required $9 million

[20] *In the Matter of: Electronic Application of Big Rivers Electric Corporation for Approval to Modify Its MRSM Tariff, Cease Deferring Depreciation Expense, Establish Regulatory Assets, Amortize Regulatory Assets, and Other Appropriate Relief*, P.S.C. Case No. 2020-00064, Order at page 26 (June 25, 2020).

minimum; accordingly, Big Rivers proposes to use the regulatory liability amount in excess of $9 million, or $11.0 million, to further reduce the SLM Regulatory Assets in 2021.

Additionally, Big Rivers requests approval to amortize over three years the regulatory asset established for the reasonable expenses incurred in developing and pursuing the relief requested before the Commission in Case No. 2019-00435, $289,406.91, and to recover those amounts through the environmental surcharge.

Q. Does this conclude your testimony?

A. Yes.

BIG RIVERS ELECTRIC CORPORATION

ELECTRONIC APPLICATION OF
BIG RIVERS ELECTRIC CORPORATION
ANNUAL REPORT ON MRSM CREDIT
CASE NO. 2021-00061

VERIFICATION

I, Paul G. Smith, 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

Paul Smith
Paul G. Smith

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Paul G. Smith on this the 26th day of February, 2021.

Katherine Bly, KYNP16841
Notary Public, Kentucky State at Large

My Commission Expires October 31, 2024

Professional Summary

Paul G. Smith
Vice President and Chief Financial Officer
Big Rivers Electric Corporation
201 Third Street
Henderson, KY 42420
Phone: 270-844-6194

Professional Experience

Big Rivers Electric Corporation
- Vice President and Chief Financial Officer — 2018 to present

NextEra Energy Transmission
- Senior Director Business Management 2012-2018

Duke Energy
- Vice President Retail Marketing 2010-2011
- Vice President Rates 2006-2009
- General Manager Budgets & Forecasts 2001-2005
- Manager UK Distribution Price Control 1998-2000
- Manager Revenue Requirements 1996-1997
- Various Financial Positions of increasing responsibility 1987-1995

Crowe, Chizek & Co (CPA) 1984-1986

Touche, Ross & Co (CPA) 1982 - 1983

Education

Master of Business Administration
- University of Chicago

Bachelor of Science Industrial Management (Computer Science Minor)
- Purdue University

Big Rivers Electric Corporation
Annual MRSM Filing
2020 Year-End TIER Credit Calculation

	Amount	TIER (Note)
Net Margins		
Net Margins Before TIER Credit	$ 43,528,617	2.28
TIER Credit	(33,333,786)	(0.98)
Net Margins	$ 10,194,831	1.30

TIER Credit Allocation	Amount	%
Regulatory Liability	$ 20,000,272	60.0%
2021 MRSM Bill Credit	13,333,514	40.0%
Total TIER Credit	$ 33,333,786	100.0%

Note: 2020 Interest Expense $ 33,982,771

Big Rivers Electric Corporation
Annual MRSM Filing
Allocation of MRSM Bill Credit to Customer Classes

Description	Total	Rural	Large Industrial
Total MRSM Bill Credit	$ 13,333,514	$ 10,497,290	$ 2,836,224
<u>Allocation of MRSM Bill Credits</u>			
Total MRSM Bill Credit	$ 13,333,514		
Initial $700k Applied to Rural Class	(700,000)	$ 700,000	-
Balance to be Allocated (Note 1)	$ 12,633,514		
Allocation to Rural Class		9,797,290	-
Allocation to Large Industrial		-	$ 2,836,224
Total MRSM Bill Credits	$ 13,333,514	$ 10,497,290	$ 2,836,224
Note 1: 2020 Revenue Allocator:			
2020 Gross Revenue	$ 226,151,812	$ 174,188,859	$ 51,962,953
Less: EDR and Non-FAC Revenue	1,536,917	-	1,536,917
Net Revenue	$ 224,614,895	$ 174,188,859	$ 50,426,036
Allocation %	100.0000%	77.5500%	22.4500%

Big Rivers Electric Corporation
Annual MRSM Filing
Status of Smelter Loss Mitigation Regulatory Assets
($000's)

	Focused Management Audit	Wilson Station Deferred Depreciation	Coleman Station Deferred Depreciation	Reid Station Unit #1 Decommission	Station Two Decommission	Coleman Station Decommission	Total
December 2019 Total Regulatory Assets	**$ 676**	**$ 120,544**	**$ 37,245**	**$ -**	**$ 90,424**	**$ -**	**$ 248,889**
2020 Deferred Depreciation	-	20,838	4,368	-	-	-	25,206
Reid Unit #1 Retirement	-	-	-	7,769	-	-	7,769
Station Two Decommissioning	-	-	-	-	1,678	-	1,678
Coleman Station Retirement	-	-	-	-	-	129,869	129,869
December 2020 Total Regulatory Assets	**676**	**141,382**	**41,613**	**7,769**	**92,102**	**129,869**	**413,411**
Less: 2019 Station Two TIER Credit	-	-	(27,743)	-	-	-	(27,743)
Less: Demand-Side Management Credit	(676)	(29)	-	-	-	-	(705)
Less: 2020 New TIER Credit (Note 1)	-	(20,000)	-	-	-	-	(20,000)
Less: 2021 Equity Utilization (Note 2)	-	(84,945)	-	-	-	-	(84,945)
December 2020 Net Regulatory Assets	**$ -**	**$ 36,408**	**$ 13,870**	**$ 7,769**	**$ 92,102**	**$ 129,869**	**$ 280,018**

Moody's
INVESTORS SERVICE

Rating Action: Moody's assigns investment grade rating of Baa3 to Big Rivers Electric Corporation senior secured term loan; outlook is stable

02 Dec 2020

Approximately $83.3 million of debt affected

New York, December 02, 2020 -- Moody's Investors Service, ("Moody's") today assigned a Baa3 rating to Big Rivers Electric Corporation's (Big Rivers) $83.3 million senior secured 10-year term loan agreement with National Rural Utilities Cooperative Finance Corporation (CFC), due 2030. The rating outlook is stable.

Big Rivers is using proceeds from the term loan to repay the $83.3 million previously borrowed under its $150 million syndicated senior secured bank revolver led by CFC to repay in full its 6.0% $83.3 million of County of Ohio, Kentucky Pollution Control Refunding Revenue Bonds (Big Rivers Electric Corporation Project), due 2031 when that issue initially became callable in July 2020.

RATINGS RATIONALE

"The rating action reflects Moody's views about Big Rivers' significant progress in securing replacement loads to create better balance between its available capacity and load profile, obtaining Kentucky Public Service Commission (KPSC) approval for rate-neutral recovery of costs associated with its sizable regulatory assets and executing strategies to reduce interest expense and mitigate refinancing risk relating to the above mentioned pollution control bonds and another bullet maturity due in 2023," said Vice-President-Senior Analyst, Kevin Rose. "Although Big Rivers' status as a rate regulated electric generation and transmission cooperative represents a unique risk not present for most of its peers, the risk is balanced by a history of credit supportive decisions from the KPSC which have been part of the impetus for Big Rivers' strengthened financial metrics during the past five years and that trend is likely to be sustainable for the foreseeable future," Rose added.

The outcomes in Big Rivers' rate cases from October 2013 and April 2014, KPSC support for retiring the Station Two plant in 2019 and other mitigation strategies have collectively supported Big Rivers' net margins for fiscal years ended (FYE) December 31, 2017-19 in a range of approximately $12.9 - $16.7 million. While the reported net margin for FYE 2019 was $16.7 million, Big Rivers actually earned a margin of $44.5 million. The reported net margin for FYE 2019 reflects the effects of an initial amortization of Big Rivers' regulatory asset balance according to the terms of the KPSC approved settlement agreement in 2018 to end the operating agreement with Henderson Municipal Power and Light (HMPL) and retire the Station Two plant in early 2019. The reported net margin for FYE 2019 produced a 1.45 times interest earned ratio (TIER), a contractual margins for interest (MFI) ratio of 1.45x and a debt service coverage (DSC) ratio of 1.63x, all as defined in the cooperative's debt documents.

For FYE 2017-19, including Moody's standard adjustments Big Rivers' funds from operations (FFO) coverage of interest, FFO to debt and DSC ratios showed steady improvement in each year and averaged 2.0x, 5.1% and 1.2x, respectively. Big Rivers is likely to continue the strengthening trend for these metrics in 2020 and beyond owing to several credit supportive KPSC orders received during 2020.

Big Rivers' equity to capitalization ratio also steadily strengthened during 2017-19 and averaged 38.6% during the period. The strength of its equity to total capitalization of 41.4% at FYE 2019 bodes well for Big Rivers' commitment under an August 2020 KPSC order to use 80% of its equity in excess of minimum levels required in its debt documents to accelerate amortization of its regulatory assets in 2021. While doing so is likely to result in a reduction in its equity ratio to near 35%, the resulting level is quite strong compared to peers.

By implementing both supply-side and demand-side strategies, as well as reducing staff and controlling other expenses, Big Rivers has made good progress towards reducing its excess capacity situation and replacing the roughly two-thirds of its annual energy sales (which equates to just under 60% of its system demand and in excess of 60% of its annual revenues) previously derived from the contracts it had with two aluminum smelters.

During the past six years, Big Rivers' supply-side initiatives have included idling its 443 MW Coleman plant in

May 2014 and then retiring the plant effective September 30, 2020, idling its 65 MW Reid Unit 1 in April 2016 and then retiring the plant effective September 30, 2020, and terminating its operating agreement with HMPL during 2018, which led to the closure of the HMPL Station Two plant on January 31, 2019 and eliminated its rights to about 187 MW of coal-fired capacity from the HMPL Station Two plant. Taking into account the 260 MW of solar capacity to be phased in under Power Purchase Agreements (PPAs) during 2022-23, these supply-side strategies offset about 435 MW of load lost when the smelters terminated their contracts in 2013 and 2014, respectively.

Big Rivers' demand-side strategies include securing a long-term contract with Nucor Corporation (Nucor: Baa1 stable), medium-term contracts for the sale of capacity and energy to load serving municipal-distribution entities in Nebraska and Kentucky, serving incremental load resulting from industrial expansion in the service territory, making short-term off system sales and participating in the capacity markets. The 20-year contract with Nucor, which is constructing a steel plate manufacturing mill in the service territory of one of Big Rivers' members, Meade County Rural Electric Cooperative Corporation, was approved by the KPSC in August 2020 and takes effect in 2022. The Nucor contract will add about 200 MW of full-requirements load, effectively establishing Nucor as one of Meade County's members. The construction and subsequent operations at the Nucor plant will also provide additional economic stimulus within the service territory. Big Rivers also has 340 MW of previously arranged power sales contracts with entities in Nebraska and Kentucky, including three contracts in place to sell capacity and energy to three Nebraska entities over nine years, which will grow to about 85 MW. Power being provided under the contracts with the Nebraska entities began flowing in 2018 and is scheduled to reach full output in 2022. In Kentucky, Big Rivers has a 10-year contract to transmit as much as 100 MW from its coal-fired Wilson Station to Kentucky Municipal Energy Agency (KyMEA) and sales to KyMEA began in May 2019. In June 2018, the City of Owensboro, Kentucky awarded Big Rivers its full-requirements contract, approximating 180 MW. The City of Owensboro contract runs from June 2020 through December 2026 and represents the municipal utility's full annual energy requirements estimated at 825,000 megawatt hours and annual peak load of about 155 MW, net of its 25 MW provided through a contract with the Southeast Power Administration. The combination of these contracts and economic development rates that contribute to industrial expansion in the service territory have increased Big Rivers' load demand by about 575 MW. When these demand-side strategies are combined with the aforementioned supply-side decisions that ultimately reduce net available capacity by 435 MW, they collectively create better balance between Big Rivers' future available generation capacity and load demand requirement.

Big Rivers' credit profile continues to benefit from credit supportive decisions by the KPSC. In May 2020, the KPSC approved Big Rivers' request to increase the size of its senior secured bank credit facility, thus enhancing the cooperative's liquidity position, and in June the KPSC approved virtually all aspects of Big Rivers' request to create and provide a rate neutral means to recover the cooperative's sizable regulatory assets resulting from its various supply-side decisions. The June KPSC order is credit positive because it enables the cooperative to avoid the risk of potential write-offs to its equity if it was otherwise unable to recover the costs of remaining net investments from its customers as a regulatory asset. Two additional credit supportive decisions from the KPSC were rendered in August 2020, one which largely supports strategic plans and provides a means for cost recovery relating to Big Rivers' proposed 2020 Environmental Compliance Plan and the other approved the retail contract for electric service between Meade County and Nucor and the wholesale letter agreement between Big Rivers and Meade County.

Big Rivers maintains ample liquidity by supplementing its existing cash on hand and internally generated cash flow with a $150 million syndicated senior secured credit agreement with six financial institutions, led by CFC, which expires June 11, 2023. The agreement has the option, subject to the banks agreeing, for two one-year extensions of the expiration date. As of September 30, 2020, Big Rivers had a cash and temporary investments balance of about $33.1 million and had $61.7 million available under the CFC credit agreement. The availability under the credit agreement is anticipated to increase to about $145 million upon when proceeds from the term loan are used to repay a like amount outstanding under the syndicated agreement. Big Rivers is likely to have some moderate need for new debt financing for the next eight quarters to fund a portion of its capital spending program, while also meeting scheduled debt maturities. The debt maturities are largely comprised of scheduled amortizations of long-term debt to be paid at roughly $8 million - $10 million per quarter. The CFC syndicated credit agreement has no ongoing material adverse change clause, but does include a specific interest coverage covenant, which largely mirrors the covenant that exists in its mortgage indenture. The CFC agreement also separately requires Big Rivers to maintain a minimum equity balance at each fiscal quarter-end and year-end of $417 million plus 50% of the cooperative's cumulative positive net margins for each of the preceding fiscal years, beginning with the fiscal year ended December 31, 2019. Big Rivers is comfortably in compliance with these covenants.

Big Rivers also has RUS approval for loans to be funded no later than December 2023 which would provide reimbursement for certain transmission asset investments already made and would refinance half of its Series B Note which has a $245.5 million balloon payment due in December 2023, with the remainder intended to be satisfied with cash. This funding source from the RUS reduces any potential refinancing risk at Big Rivers that otherwise existed.

RATING OUTLOOK

The stable rating outlook reflects a prevailing credit supportive regulatory environment, including approvals for regulatory asset cost recovery, and the likelihood that Big Rivers can sustain its trend of strengthening financial metrics, while also benefitting from establishing better balance between its available capacity and load profile following the loss of significant load from aluminum smelters several years ago. The outlook also considers the cooperative's progress toward reducing refinancing risk and limited new debt financing needs during the next three years. The outlook additionally incorporates the likelihood that Big Rivers will remain resilient to the potential negative effects of the coronavirus pandemic and that the smelters will continue to operate and that the Nucor load will materialize, thus providing support for the local economy, including employment levels.

FACTORS THAT COULD LEAD TO AN UPGRADE OR DOWNGRADE OF THE RATINGS

What Could Change the Rating -- Up

Achieving further strengthening of financial metrics by recovering a significant regulatory asset balance as approved by the KPSC and completing additional strategies to better align the cooperative's capacity supply and load profile on a longer-term sustainable basis.

Achieving stronger metrics to balance unique business and financial risks; for example, FFO coverage of interest and debt improving to 2.4x and in a range of 6%-7%, respectively, with the DSC ratio tracking at close to 1.2x or better on a sustained basis.

What Could Change the Rating -- Down

A negative rating action is unlikely in the next two years because of the prevailing credit supportive regulatory environment; however, a negative rating action could result if there was a shift to a less credit supportive regulatory environment or if liquidity unexpectedly deteriorates.

Negative rating pressure would also increase if substantial assurance for recovery of environmental compliance costs and sizable regulatory assets over time do not occur as defined under the recently approved KPSC regulatory orders.

A scenario under which either or both of the smelters discontinued operations would be credit negative because of the potential residual negative effects on the local economy or if the Nucor load does not materialize.

In terms of metrics, FFO to debt and DSC ratios below 4% and 1.2x, respectively, for a sustained period would pressure the rating.

Big Rivers Electric Corporation is an electric generation and transmission cooperative headquartered in Henderson, Kentucky and owned by its three member system distribution cooperatives— Jackson Purchase Energy Corporation; Kenergy Corp; and Meade County Rural Electric Cooperative Corporation. These member system cooperatives provide retail electric power and energy to approximately 116,000 residential, commercial, and industrial customers in 22 Western Kentucky counties.

The principal methodology used in these ratings was US Electric Generation & Transmission Cooperatives published in August 2018 and available at https://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_1130742. Alternatively, please see the Rating Methodologies page on www.moodys.com for a copy of this methodology.

REGULATORY DISCLOSURES

For further specification of Moody's key rating assumptions and sensitivity analysis, see the sections Methodology Assumptions and Sensitivity to Assumptions in the disclosure form. Moody's Rating Symbols and Definitions can be found at: https://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_79004.

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At least one ESG consideration was material to the credit rating action(s) announced and described above.

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Big Rivers Electric Corporation
Interest Savings Attributable to Investment Grade Credit Rating

	$150m Facility- Non-Investment Grade Level V		$150m Facility- Investment Grade Level IV		*Difference*	
Amounts & Terms:						
Total Facility Amount:	$	150,000,000	$	150,000,000	*$*	-
Term (Years):		3		3		-
Secured/ Unsecured:		Secured		Secured		
Fees:						
One-Time/ Up-Front Fee:						
Arranger Fee ($ Amt.)	$	10,000	$	10,000	*$*	-
Upfront Fee (% of Total Facility)		0.175%		0.175%		*0.000%*
Upfront Fee ($ Amt.)	$	262,500	$	262,500	*$*	-
Annual Fees:						
Annual Facility Fee (% of Total Facility) *(per Pricing Grid)* [(1)]		0.350%		0.250%		*0.100%*
Annual Facility Fee ($ Amt.)[(1)]	$	525,000	$	375,000	*$*	*150,000*
Annual Admin. Fee ($ Amt.)	$	20,000	$	20,000	*$*	-
Letter of Credit (L/C) Fees:						
L/C Fronting Fee (% of Total L/Cs Outstanding)		0.125%		0.125%		*0.000%*
L/C Fronting Fee (Annual $ Amt. Assuming $5MM L/Cs Outstanding)	$	6,250	$	6,250	*$*	-
L/C Participant Fee (% of Total L/Cs Outstanding) (per Pricing Grid) [(1)]		1.650%		1.500%		*0.150%*
L/C Fronting Fee (Annual $ Amt. Assuming $5MM L/Cs Outstanding)	$	82,500	$	75,000	*$*	*7,500*
Total Upfront Fees (one-time fees)	$	272,500	$	272,500	$	-
Total Annual Fees	$	545,000	$	395,000	$	150,000
Total Letter of Credit Fees (assuming $5MM outstanding)	$	88,750	$	81,250	$	7,500

[(1)] Based on Big Rivers' current credit ratings and ratings-based pricing grid per existing 2020 agreement (see below).

= *Big Riverss current credit ratings and applicable Pricing Level as of 2/19/2021.*

	Ratings			Big Rivers Rates	
Pricing Level	S&P	Moody's	Fitch	L/C Part. Fee & LIBO Margin	Annual Facility Fee
I.	≥ A-	≥ A3	≥ A-	1.000%	0.125%
II.	BBB+	Baa1	BBB+	1.100%	0.150%
III.	BBB	Baa2	BBB	1.300%	0.200%
IV.	BBB-	Baa3	BBB-	1.500%	0.250%
V.	BB+	Ba1	BB+	1.650%	0.350%
VI.	BB	Ba2	BB	2.125%	0.375%
VII.	≤ BB-	≤ Ba3	≤ BB-	2.300%	0.500%

National Rural Utilities
Cooperative Finance Corporation
Created and Owned by America's Electric Cooperative Network

20701 Cooperative Way
Dulles, Virginia 20166
703-467-1800 | www.nrucfc.coop

This fax consists of 1 page
*****Please Deliver Immediately*****

Date: **December 3, 2020**
To: **Big Rivers Electric Corporation**
Attn: **Charlie Shelton**
Fax: **2708446408**
Re: **Pricing Change Notice – Big Rivers Electric Corporation**

PRICING CHANGE NOTICE

Big Rivers Electric Corporation Revolving Credit Facility

Aggregate Commitment:	**$150,000,000.00**
Your Share:	**$150,000,000.00**
Pro-Rata:	**100.000000%**

CFC, as Administrative Agent, is hereby notifying the Lenders that the ABR Applicable Margin, LIBOR Applicable Margin, Facility Fee Percentage, and LC Participation Fee as defined in the Credit Agreement, are being adjusted due to the recent upgrade in Big Rivers Electric Corporation's Debt Ratings.

Effective December 2, 2020, the ABR Applicable Margin will be 0.500%, the LIBO Applicable Margin will be 1.500%, the LC Participation Fee will be 1.500%, and the Facility Fee Percentage will be 0.250%.

Regards,

Loan Syndications
P: 703-467-1629
F: 703-467-5681
E: loansyndications@nrucfc.coop

REGULATORY ASSET
Environmental Compliance Plan Case Expenses (Case No. 2019-00435)

	Total
Dinsmore and Shohl LLP - Legal	268,759.02
Catalyst Consulting LLC - Expert Witness	20,647.89
Total	**289,406.91**

Big Rivers incurred expenses for legal counsel and expert testimony while preparing and prosecuting its Environmental Compliance Plan, Case No. 2019-00435. In its final order, the Commission approved the establishment of a regulatory asset to defer such reasonable costs for future recovery. The regulatory asset balance as of Decemer 31, 2020, was $289,406.91.

ORIGINAL

Big Rivers
ELECTRIC CORPORATION

Your Touchstone Energy® Cooperative

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF BIG RIVERS ELECTRIC CORPORATION FOR REVIEW OF ITS MRSM CREDIT FOR CALENDAR YEAR 2020	)))))	**Case No. 2021-00061**

DIRECT TESTIMONY

OF

MICHAEL T. PULLEN
CHIEF OPERATING OFFICER

ON BEHALF OF

BIG RIVERS ELECTRIC CORPORATION

FILED: February 26, 2021

Application Exhibit B

DIRECT TESTIMONY

OF

MICHAEL T. PULLEN

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DIRECT TESTIMONY

OF

MICHAEL T. PULLEN

I. <u>INTRODUCTION</u>

Q. Please state your name, business address and occupation.

A. My name is Michael T. Pullen. My business address is 201 Third Street, Henderson, Kentucky 42420. I am the Chief Operating Officer for Big Rivers Electric Corporation ("Big Rivers").

Q. Please summarize your education and professional experience.

A. I graduated from the University of Mississippi in 1985 with a Bachelor of Science in Electrical Engineering and Murray State University in 2005 with a Masters of Business Administration. I am a registered Professional Engineer in the Commonwealth of Kentucky. I worked at Electric Energy, Inc. from 1990 to 2014. I served in a variety of engineering, maintenance, and operation roles including Group Supervisor Maintenance; Manager Systems-Dispatch; Manager, Generation; and Director, Operations. I also was employed by Ameren Illinois from 2014 to 2015 and served in substation construction management. I began my career with Big Rivers in

February 2015 as the Vice President Production. Currently, I serve as the Chief Operating Officer for Big Rivers.

Q. Please summarize your duties at Big Rivers.

A. As the Chief Operating Officer for Big Rivers, I oversee all activities related to the operation and maintenance of the corporation's coal and gas-fired generating facilities, including fuel procurement and management, power plant engineering and construction, and environmental compliance. In addition to these responsibilities, I oversee all activities related to the bulk transmission system including operation, maintenance, engineering and construction, as well as the purchasing, and information technology activities for the corporation.

Q. Have you previously testified before the Kentucky Public Service Commission ("Commission")?

A. Yes. I provided written and oral testimony on behalf of Big Rivers in Case No. 2019-00269[1] in which the Company is requesting that the Commission enforce the series of contracts between Big Rivers and the City of Henderson and the City of Henderson Utility Commission (collectively,

[1] *In the Matter of: Application of Big Rivers Electric Corporation for Enforcement of Rate and Service Standards* (filed July 31, 2019).

"HMP&L" or "Henderson") related to the William L. Newman Station Two ("Station Two") generating plant. I recently provided written testimony in Case No. 2019-00435, in which Big Rivers sought and obtained approval of its 2020 Environmental Compliance Plan, a certificate of public convenience and necessity, and other relief. I also testified in in Case No. 2016-00278,[2] in which Big Rivers sought and obtained an order from the Commission declaring that Big Rivers was not responsible for the variable costs of any "Excess Henderson Energy," that Big Rivers declined to take. I responded to requests for information in Case No. 2019-00269, Case No. 2020-00064,[3] and Case No. 2018-00146.[4]

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

A. The purpose of my testimony is to provide information regarding: (i) two of the matters identified in the May 29, 2020, Settlement Agreement among Big Rivers, Kentucky Industrial Utility Customers, Inc., and the Office of

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[2] *In the Matter of: Application of Big Rivers Electric Corporation for a Declaratory Order* (filed July 29, 2016).

[3] *In the Matter of: Application of Big Rivers Electric Corporation for Approval to Modify its MRSM Tariff, Cease Deferring Depreciation Expenses, Establish Regulatory Assets, Amortize Regulatory Assets, and Other Appropriate Relief* (filed Feb. 28, 2020).

[4] *In the Matter of: Application of Big Rivers Electric Corporation for Termination of Contracts and a Declaratory Order and for Authority to Establish a Regulatory Asset* (filed May 1, 2018).

the Attorney General of the Commonwealth of Kentucky;[5] (ii) the reasonableness of the expected costs of decommissioning Coleman Station, Reid Station Unit 1, and Station Two; and (iii) actions taken by Big Rivers to minimize these decommissioning costs.[6]

Q. Please identify the information you will be providing pursuant to Ordering Paragraph 10 of the June 25, 2020, Order in Case No. 2020-00064.

A. I will provide information specifically in regard to the last two matters identified in May 29, 2020, Settlement Agreement, as set forth in the Commission's Order.[7] The matters include:

1. The status of and expected decommissioning costs of Coleman Station, Reid Station Unit 1, and Big Rivers' estimated share of costs associated with Station Two; and
2. A copy of any proposal to decommission Coleman Station, Reid Station Unit 1, and Station Two that was awarded in the prior year.

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[5] *In the Matter of: Electronic Application of Big Rivers Electric Corporation for Approval to Modify Its MRSM Tariff, Cease Deferring Depreciation Expense, Establish Regulatory Assets, Amortize Regulatory Assets, and Other Appropriate Relief*, P.S.C. Case No. 2020-00064, Order (June 25, 2020), at page 16.

[6] *Id.* at page 21.

[7] *Id.* at page16.

I will also support the reasonableness of the decommissioning costs and provide detailed descriptions of all actions Big Rivers has taken to minimize decommissioning costs.[8]

Q. Are you sponsoring any Exhibits?

A. Yes. I have prepared the following exhibits to my testimony.

- Exhibit Pullen-1 – Professional Summary;
- Exhibit Pullen-2 – Awarded Proposal for Coleman Station;
- Exhibit Pullen-3- Awarded Proposal for Asbestos and Insulation Abatement at Reid Station Unit 1;
- Exhibit Pullen-4 – List of Incurred Costs for the Decommissioning of Station Two as of December 31, 2020.

II. STATUS OF AND EXPECTED DECOMMISSIONING COSTS

A. COLEMAN STATION

Q. What is the status of decommissioning of the Coleman Station?

A. As the Commission is aware, the Coleman Station was idled in May of 2014, and steps were taken in 2020 to transition the plant into a "safe, dark, and dry" status to prepare the plant to undergo full decommissioning.

[8] *Id*. at page 21.

Following the Commission's June 25, 2020, Order in Case No. 2020-00064, authorizing Big Rivers to establish a regulatory asset for the actual remaining net book value and decommissioning costs for Coleman Station and approving the retirement of Coleman, Big Rivers promptly began soliciting bids for work to decommission the plant. The Coleman Station plant decommissioning was awarded to Complete Demolition Services ("*CDS*"). Work is expected to start in March of 2021, and be completed in twelve to fourteen months. A copy of the CDS full proposal and revised bid, are attached as Exhibit Pullen-2.

Coleman Station includes three coal ash ponds, known as the South Pond (approximately ninety-four (94) acres in size), Sluice Pond (approximately forty-nine (49) acres in size), and North Pond (approximately sixty (60) acres in size). The closure of these ponds is "Project 13-2" of Big Rivers' 2020 Environmental Compliance Plan.[9] Big Rivers plans to close these ponds by capping them in place with a cover system, as outlined in the Coal Combustion Residuals ("CCR") Rule.[10] From start to finish, the closure of the Coleman Station ash ponds is expected to take approximately five (5) years. Big Rivers is currently awaiting the issuance of final EPA Coal Combustion Residual regulations

[9] P.S.C. Case No. 2019-00435.

[10] Case No. 2019-00435, Application Exhibit E, Direct Testimony of Michael T. Pullen at page 39.

prior to finalizing detailed engineering design in order to begin the competitive bid process for Coleman ash pond closure as discussed in my Direct Testimony in Case No. 2019-00435.

Q. Please detail the anticipated decommissioning costs expected to be incurred by Big Rivers for the Coleman Station.

A. The anticipated decommissioning costs for Coleman Station include the $2,702,345.00 for work performed by CDS, as detailed in the attached Exhibit Pullen-2. This does not include the removal of the scrubber unit, which will be removed and transferred to Big Rivers' Wilson Station.[11] The estimated capital cost for closing Coleman Station's three ash ponds is $48.72 million (excluding capitalized interest of approximately $4.5 million); following completion of this project, estimated O&M expenses related to the closed ash ponds are expected to be approximately $21,000 annually.[12]

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[11] Case No. 2020-00064.

[12] Case No. 2019-00435, Application Exhibit E, Direct Testimony of Michael T. Pullen.

B. REID STATION UNIT 1

Q. What is the status of decommissioning of Reid Station Unit 1?

A. Reid Station Unit 1 ("*Reid Unit 1*") was retired on September 30, 2020. Due to it being adjacent to HMP&L's Station Two, Reid Unit 1 is expected to be fully decommissioned in connection with the full decommissioning of Station Two. However, as the Commission is aware, there are outstanding issues between Big Rivers and HMP&L related to the decommissioning of Station Two that are delaying the decommissioning of Station Two. Those issues are in front of the Commission in Case No. 2019-00269.[13]

While Big Rivers is prepared to begin the full decommissioning process at Reid Unit 1, Big Rivers is proceeding with certain decommissioning activities, such as making the unit "dry, dark, and safe" as well as asbestos and insulation abatement. The asbestos and insulation abatement project was awarded to General Insulation. The insulation removal project started on December 21, 2020, and the non-asbestos portion of the project is estimated to be complete on March 5, 2021. Big Rivers anticipates the asbestos removal portion of the project will begin on March 8, 2021, and estimates the project will take eight weeks, with a completion date around May 28, 2021.

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[13] *In the Matter of: Application of Big Rivers Electric Corporation for Enforcement of Rate and Service Standards*, P.S.C. Case No. 2019-00269 (filed July 31, 2019).

Q. Please detail the anticipated decommissioning costs expected to be incurred by Big Rivers for the Reid Station Unit 1.

A. The 2016 Burns & McDonnell Decommissioning Cost Estimate Study for Coleman Station and Reid Station Unit provides the ongoing costs for the retirement in place of Reid Unit 1, which is equivalent to the costs Big Rivers anticipates incurring until full decommissioning begins and while waiting for the issues in Case No. 2019-00269 to be resolved. Big Rivers previously provided the Commission a copy of this study, in response to the Commission Staff's Initial Request for Information in Case No. 2020-00064.

The anticipated cost of asbestos and insulation removal is $840,513.00. A copy of the General Insulation bid is attached as Exhibit Pullen-3.

C. <u>STATION TWO</u>

Q. What is the status of decommissioning of Station Two?

A. Big Rivers and HMP&L began the process of decommissioning the Station Two site by starting to transition the plant into a "safe, dark, and dry" status to prepare the plant to undergo full decommissioning in the near future.[14] My direct testimony in Case No. 2019-00269 details the work

[14] See P.S.C. Case No. 2019-00269, Application Exhibit 4, Direct Testimony of Michael T. Pullen at pages 4-5.

already performed to get the units in a "dry, dark, and safe" condition and Big Rivers' continuing work to maintain the units in a dry, dark and safe condition until the Station Two site is fully decommissioned.[15]

Big Rivers is prepared to continue with the full decommissioning process for Station Two, including decommissioning any joint use facilities as Big Rivers ceases to utilize them. However, decommissioning cannot proceed due to the outstanding issues between Big Rivers and HMP&L related to the decommissioning of Station Two, which are in front of the Commission in Case No. 2019-00269.[16]

In addition, the retirement of the Henderson Station Two generating units in February of 2019, triggered an obligation for Henderson to decommission the Station Two ash pond by April of 2024. Big Rivers proposes to close the approximately 24-acre ash pond by capping it in place with a cover system, as outlined in the CCR Rule. Further work to complete the closure of the ash pond is awaiting resolution of the disputes, including appropriate cost allocation between Big Rivers and Henderson, which are currently before the Commission in Case No. 2019-00269.

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[15] *See id.*

[16] *In the Matter of: Application of Big Rivers Electric Corporation for Enforcement of Rate and Service Standards*, P.S.C. Case No. 2019-00269 (filed July 31, 2019).

Big Rivers has also recommended to Henderson that the abatement of asbestos at Station Two begin immediately, while the parties continued their attempts to resolve their differences on the financial and other issues arising out of the Station Two Contracts. After initially acknowledging its responsibility to share the asbestos abatement cost, Henderson ultimately declined to participate in any cost and only agreed to place the work out for bid in accordance with City procurement requirements. However, Henderson has refused to award a contract.

Q. Please detail the anticipated decommissioning costs expected to be incurred by Big Rivers for Station Two (including the total anticipated decommissioning costs and Big Rivers' estimated share of such costs).

A. Big Rivers anticipates its share of the costs to fully decommission Station Two, will include its share of the costs to fully decommission the Station Two site, the Station Two ash pond, the ash pond dredgings in the Green landfill, and all other joint use facilities, either now (if Big Rivers is no longer going to utilize them) or in the future (once Big Rivers ceases to utilize them). Henderson is contractually obligated to pay 22.76% of the Station Two decommissioning costs, and Big Rivers will pay the remaining 77.24%.

As of December 31, 2020, Big Rivers has incurred $8,015,631 in costs associated with decommissioning Station Two, this includes costs associated with the plant, its ash pond, and Green Landfill. Big Rivers' share of those costs is $6,828,405, as reflected in Exhibit Pullen-4.[17]

Until the Station Two site is fully decommissioned, including dismantling the generating units and restoring the site to a condition suitable for industrial use, there will continue to be ongoing maintenance associated with the Station Two site, including routine maintenance costs such as maintaining stack lighting in accordance with Federal Aviation Administration regulations, providing site security, and maintaining the fire protection system and the asbestos insulation. I've estimated that there will be approximately $750,000 in annual maintenance expenses on an ongoing basis until the Station Two site is fully decommissioned.[18] If Henderson chooses not to proceed with the decommissioning of Station Two and instead retires the units in place, these annual maintenance expenses should be Henderson's sole responsibility.

Except for the costs to abate the asbestos at Station Two, neither Big Rivers nor Henderson has commissioned a decommissioning study to obtain

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[17] Case No. 2019-00269, Application, Direct Testimony of Michael T. Pullen, Exhibit Pullen-2 (showing the costs Big Rivers incurred as of June 30, 2019).

[18] *Id.*, Direct Testimony of Michael T. Pullen, at page 11.

an estimate of the costs to decommission the Station Two units. As I presented in oral testimony in the Case No. 2019-00269, the dismantling costs for the Station Two decommissioning, based on bids received for decommissioning of Big Rivers' Coleman generating station, are expected to be $3-6 million.

This estimate does not include the decommissioning costs of certain joint use facilities, such as the costs to close the Station Two ash pond or future costs relating to environmental monitoring and the costs of any required environmental remediation that could be required at the ash pond. I estimate the costs associated with closing the ash pond to be in the range of $13.3 million, with annual estimated costs of $25,000 for ground watering monitoring for thirty years.

In addition, the estimate does not include the ongoing costs that are attributable to Henderson's use of the Big Rivers Green Station landfill, which is the repository for Station Two ash pond dredgings that are owned by Henderson and are listed as a joint use facility in Exhibit 1 to the 1993 Amendments to Contracts. Plus, like with the Station Two ash pond, there will be future costs associated with the Station Two ash pond dredgings in the Big Rivers landfill, such as environmental monitoring costs and the costs for any required environmental remediation, as well as the costs to close the landfill at the end of its life, for which Henderson will be responsible for its share under the terms of the Station Two Contracts.

As fully discussed in my Direct Testimony in Big Rivers' Application in Case No. 2019-00269, Big Rivers received two firm price proposals to remove asbestos and non-asbestos insulation from the Station Two units. The proposals for the project range from approximately $1.6 million to $2.8 million.

III. AWARDED PROPOSALS FOR DECOMMISSIONING

Q. Were any proposals for the decommissioning of the Coleman Station, Reid Station Unit 1, or Station Two awarded in 2020?

A. Yes. Please see Exhibit Pullen-2, a copy of all proposals awarded for decommissioning of Coleman Station, and Exhibit Pullen-3, a copy of all proposals awarded for decommissioning of Reid Unit 1. No proposals were awarded for the decommissioning of Station Two.

IV. REASONABLENESS OF DECOMMISSIONING COSTS

Q. Are the 2020 decommissioning costs reasonable?

A. Yes. The decommissioning plans for Coleman and Reid Unit 1 reflect careful, detailed, internal and external scrutiny. This scrutiny began with the detailed investigation and analysis of environmental compliance requirements, with the assistance of Burns & McDonnell Engineering ("Burns & McDonnell"). This planning process ensures the decommissioning process includes only reasonable measures necessary and appropriate for continued environmental compliance and appropriate reuse of the site. Big Rivers' decommissioning projects, including the Commission-approved projects included in the Company's 2020 ECP Plan, reflect its sensible and responsible approach to addressing existing and future obligations.

Big Rivers has taken additional steps to minimize the cost of decommissioning through the possible sale of the tangible assets at the Coleman Station, or reuse of the assets, such as Big Rivers' present project to transfer the Flue-gas Desulfurization ("FGD") system at the Coleman Station to the Wilson Station.

With regard to Station Two (and the adjacent Reid Unit 1 that will be fully decommissioned once Station Two is fully decommissioned), because Big Rivers cannot unilaterally dismantle City-owned property, until Henderson either agrees or is forced to fulfill its legal and contractual obligations with respect to Station Two, Big Rivers is maintaining the Station Two site in accordance with the law (such as the FAA regulations with respect to stack lighting) and prudent utility practice (such as doing walk downs of the Station Two site to ensure that it does not become a hazard to nearby people of properties).

Q. Please provide detailed descriptions of all actions Big Rivers has taken to minimize decommissioning costs?

A. Big Rivers is minimizing the Coleman Station decommissioning costs through the reuse of the Coleman FGD and associated equipment.[19] Big Rivers received Commission approval to reuse the FGD system at the Coleman Station by moving it to the Wilson Station.[20]

Once the decommissioning plan for Coleman Station was designed and upon receiving regulatory approval, Big Rivers completed detailed engineering work to allow for competitive bidding of the construction and procurement work. The bids were evaluated based on cost, schedule, conformance to bid specifications, and demonstrated experience in safely and efficiently doing the type of work. As part of the decommissioning contract with CDS, the contractor will take all material suitable for scrap for their benefit. The expected proceeds from the sale of this scrap material is included in the CDS price for decommissioning as an offset to their costs.

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[19] Case No. 2020-00064, Application at page 18.

[20] P.S.C. Case No.2019-00435 ("Project 12").

As explained above Big Rivers is proceeding with certain decommissioning activities, such as making the unit "dry, dark, and safe" as well as asbestos and insulation abatement. After competitive bidding of the asbestos and insulation abatement project, the bids were evaluated based on cost, schedule, conformance to bid specifications, and demonstrated experience in safely and efficiently doing the type of work. This process is designed to minimize the decommissioning costs.

V. CONCLUSION

Q. Does this conclude your testimony?

A. Yes, it does.

BIG RIVERS ELECTRIC CORPORATION

ELECTRONIC APPLICATION OF
BIG RIVERS ELECTRIC CORPORATION
ANNUAL REPORT ON MRSM CREDIT
CASE NO. 2021-00061

VERIFICATION

I, Michael T. ("Mike") Pullen, 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

Michael T. Pullen

Michael T. ("Mike") Pullen

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Michael T. ("Mike") Pullen on this the 26th day of February, 2021.

Katherine R Gray, KYNP16841

Notary Public, Kentucky State at Large

My Commission Expires October 31, 2024

Professional Summary

Michael T. Pullen
Chief Operating Officer
Big Rivers Electric Corporation
201 Third Street
Henderson, KY 42420
Phone: 270-844-6186

Professional Experience

Big Rivers Electric Corporation - 2015 to present
- Chief Operating Officer
- Executive Vice President
- Vice President Production

Ameren Illinois – 2014-2015
- Manager Substation Construction

Electric Energy, Inc. – 1990-2014
- Director Operations
- Manager Generation
- Manager Systems-Dispatch
- Group Supervisor Maintenance

Education

Master of Business Administration
- Murray State University

Bachelor of Science Electrical Engineering
- University of Mississippi

9/21/20

Big River Electric Corp.
Coleman Station
Demolition & Abatement
Combination Bid

Complete Demolition Services understands the savings and convenience that can be utilized on a project of this nature from working with ONE contractor. We have always strived to not only say that in words but show that in price. With having one contractor there are no scheduling issues, both abatement and demolition can be happening simultaneously, if hidden asbestos is found during demolition there are no long delays and high cost to getting it abated. Previous customers have used words like; smooth, seamless, militarily efficient, headache free, simple, cohesive, to describe their experience when partnering with Complete Demolition Services for their challenging projects.

Demolition of Coleman Station- Complete Demolition Services will provide all permitting, labor, equipment, supervision, removal and legal disposal of debris and backfilling, associated with the demolition of the 3 generator structures and all associated buildings. Work would include removal of any basements, pits, footers and foundations to a depth of 3 foot below grade, backfilling those areas with either crushed concrete gravel or borrowed fill dirt. Also included is the implosion and cleanup of all smokestacks. Excluded is the removal of the Scrubber unit, to be removed by Big River Electric Corp.

Complete Demolition Services – 1943 S 16th Street – Louisville, KY 40210
502-822-3480 / fax 502-822-3481
www.demolitionservices.us

Demolition Cost: **$2,225,000.00**
Asbestos Abatement Bid: **$977,345.00**
Total: **$3,202,345.00**
Combo Discount: **$800,000.00**
Total Combo Price: **$2,402,345.00**

Complete Demolition Services has a triple A bond rating and is insurable up to Five Million dollars. At CDS we have over 25 years of experience doing very complex and complicated demolition jobs with an outstanding safety record and on time completion record. We have done many jobs just like this one. I look forward to working with you on this project. If you have any questions, or need any additional information, please feel free to contact me. Thank you for your interest in CDS for all your demolition and environmental needs.

Complete Demolition Services – 1943 S 16th Street – Louisville, KY 40210
502-822-3480 / fax 502-822-3481
www.demolitionservices.us

11/16/20

Big River Electric Corp.
Coleman Station
Demolition & Abatement
Combination Bid
REVISED

Revised pricing reflects changes and addition to the scope of work. Reflected changes are the 9 additional items listed in the email and attached to this Bid. The additional work amounts to an increase in the original bid of $300,000.00

Complete Demolition Services understands the savings and convenience that can be utilized on a project of this nature from working with ONE contractor. We have always strived to not only say that in words but show that in price. With having one contractor there are no scheduling issues, both abatement and demolition can be happening simultaneously, if hidden asbestos is found during demolition there are no long delays and high cost to getting it abated. Previous customers have used words like; smooth, seamless, militarily efficient, headache free, simple, cohesive, to describe their experience when partnering with Complete Demolition Services for their challenging projects.

Demolition of Coleman Station- Complete Demolition Services will provide all permitting, labor, equipment, supervision, removal and legal disposal of debris and backfilling, associated with the demolition of the 3 generator structures and all associated buildings. Work would include removal of any basements, pits, footers and foundations to a depth of 4 foot below grade, backfilling those areas with either crushed concrete gravel or borrowed fill dirt. Also included is the implosion and cleanup of all smokestacks. Excluded is the removal of the Scrubber unit, to be removed by Big River Electric Corp.

ADDITIONAL ITEMS ADDED TO SCOPE OF WORK:

1. Demolition will include the removal of all structures, equipment, tanks, conveyer systems, ancillary buildings, and any other associated equipment to four (4) feet below grade.

a. Foundations and ground floor slabs will be removed to four (4) feet below grade. The surface will be graded for drainage using onsite soil and seeded.
b. Concrete will be crushed on-site and buried in existing basements. Concrete in trenches and basements will be perforated to create drainage. Once the capacity of all existing basements has been exceeded, remaining concrete will be crushed and used as clean fill on-site.

2. Except for the circulating water lines, underground piping will be abandoned in place. Concrete circulating water system pipes will be capped, have the tops broken out, and backfilled with on-site soil. Steel circulating water pipes will be removed and scrapped

3. All pipe supports, and pipe racks will be demolished and scrapped.

4. All portable tanks will be removed from the site and scrapped, including any propane tanks, oil storage tanks, and waste oil tanks.
5. The substation equipment owned by the Plant including breakers, air break disconnect switch, bus bars, grounding cable and transformers up to the interconnection point will be removed.
6. The coal pile area will be excavated to a depth of one (1) foot, graded, capped, and covered with imported topsoil.
7. Site areas will be graded to achieve suitable site drainage to natural drainage patterns, but grading will be minimized to the extent possible.

8. All production wells will be closed as per state regulations. Production wells will be filled with grout to approximately five feet below surface grade. The top five feet will be overdrilled and filled with soil backfill to grade on top of the grout. Monitoring wells will remain intact.

9. After the barge unloading equipment and structure are removed, the mooring cells will also be removed. The area in front of the unloading facility will be filled with materials required to restore the original river bankline in accordance with the Corps of Engineers' requirements.

REVISED PRICE:

Demolition Cost: **$2,525,000.00**
Asbestos Abatement Bid: **$977,345.00**
Total: **$3,502,345.00**
Combo Discount: **$800,000.00**
Total Combo Price: **$2,702,345.00**

Complete Demolition Services has a triple A bond rating and is insurable up to Five Million dollars. At CDS we have over 25 years of experience doing very complex and complicated demolition jobs with an outstanding safety record and on time completion record. We have done many jobs just like this one. I look forward to working with you on this project. If you have any questions, or need any additional information, please feel free to contact me. Thank you for your interest in CDS for all your demolition and environmental needs.

CDS DEMOLITION

Complete Demolition Services – 1943 S 16th Street – Louisville, KY 40210
502-822-3480 / fax 502-822-3481
www.demolitionservices.us

GENERAL INSULATION

1118 5th Street
Henderson, KY 42420

December 9, 2020

Big Rivers

ATTN: Mary

RE: Schedule at Reid for Insulation and Asbestos Removal

Mary,

General Insulation will work Monday through Thursday, 10-hours per day 40 hours per week for removing non-asbestos material. General would offer Big Rivers a cost savings of $ 20,000 for working 40 hours in lieu of 50 hours per week

During the asbestos removal General Insulation will work 50 hours per week, The time frame for completion will be 4 to 5 months for the project

Total $ 840,513

If I can be of further assistance, please call me at 270.826.4461.

Sincerely,

Clayton Smith Jr.
Division Manager

GENERAL INSULATION

1118 Fifth Street, Henderson, KY 42420
OFFICE 270-826-4461 FAX 270-826-4404

11/6/2020

Big Rivers Electric Corporation
Reid / Green / Station Two
9000 State Highway 2096
Robards, KY 42452

ATTN: Mary Holmes

RE: Reid Station R1 Asbestos and Non-Asbestos Removal
RFQ No. RD-20-01

Ms. Holmes,

General Insulation is pleased to submit our lump sum pricing for the above-mentioned project. Please see the below clarifications and pricing.

Clarifications:

1) Our price includes providing all the scaffold necessary to perform the work.
2) Our price is based on all 3rd party air monitoring to be provided.
3) Our price is based on all asbestos to be completed no longer than a 5-month period.
4) Our price is based on providing all dumpsters for the work.
5) All our safety and qualification paperwork are on file for Big Rivers.
6) Our price is based on all work to done in accordance with all state, local and federal guide-lines.

Pricing:
We purpose the lump sum price of $500,438.00 for the Asbestos Removal, and the lump sum price of $250,075.00 for the Non-Asbestos removal. We will work 50 hours per week, Monday thru Friday 10 hours per day.

Additional Items we found not in the above price after hearing from Big Rivers:

1) Once reviewing the drawings more, we found an additional 2,200 LF of piping would have to gloved bagged and scaffold built rather than being able to be removed from inside the containment that would have been built in that area. This method of removal takes more time therefore we would ask for $110,000 in additional cost above the lump sum price to cover this.
   We did include 2,000 LF in our original quote from the 14,983 LF that would have to be gloved bagged and scaffold built for that piping.

   In closing we would like to thank everyone at Big Rivers for allowing us to revisit our SOW and pricing for this project. We have had a long-standing relationship with Big Rivers and appreciate everything we have done together to help everyone succeed with good workmanship and an outstanding safety record.

If you have any questions, please do not hesitate to call me.

Sincerely,

Clayton Smith
Cc: Steven White
General Insulation
270-826-4461 office

BID SUBMITTAL FORM
RFQ #RD-20-01
Reid Asbestos BID SHEET

Supplier Name: General Insulation Inc

BID SUBMITTAL PRICING

The Proposal unit pricing will be based on expected quantities defined within the Specification. Final pricing will be calculated from proposed unit pricing listed on this page. Final invoiced costs for each item number shall be broken down into labor, mat erials and applicable equipment to facilitate Big Rivers Sales tax requirements. Big Rivers maintains a sales tax "Direct Pay" certificate with the Kentucky Department of Revenue. DO NOT include sales tax in your proposal.

Type Of Work	Labor	Equipment	Materials	Totals
Reid Station Site Structures Asbestos Removal	325,285	25,022	150,131	500,438
Reid Station Site Structures Non Asbestos Removal	150,045	12,504	87,526	250,075
Adder	62,000	8,000	40,000	110,000

CHECK LIST

- ☐ **RATE SHEET COMPLETED AND ATTACHED**
- ☐ **ADDENDA ACCEPTANCE** (ATTACHED)
- ☐ NOT APPLICABLE
- ☐ **EXCEPTIONS & CLARIFICATIONS** (ATTACHED)
- ☐ NOT APPLICABLE

BID SUBMITTAL FORM
RFQ #RD-20-01
Reid Asbestos BID SHEET

Supplier Name: General Insulation Inc.

BID SUBMITTAL PRICING

The Proposal unit pricing will be based on expected quantities defined within the Specification. Final pricing will be calculated from proposed unit pricing listed on this page. Final invoiced costs for each item number shall be broken down into labor, materials and applicable equipment to facilitate Big Rivers Sales tax requirements. Big Rivers maintains a sales tax "Direct Pay" certificate with the Kentucky Department of Revenue. DO NOT include sales tax in your proposal.

Type of Work	**Labor**	**Equipment**	**Materials**	**Totals**
Reid Station Site Structures Asbestos Removal	$325,285	$25,022	$150,131	$500,438
Reid Station Site Structures Non-Asbestos Removal	$150,045	$12,504	$87,526	$250,075
Asbestos Removal	$62,000	$8,000	$40,000	$110,000

CHECKLIST

☐ RATE SHEET COPLETED AND ATTACHED

☐ ADDENDA ACCEPTANCE (ATTACHED)

☐ NOT APPLICAIBLE

☐EXCEPTIONS AND CLARIFICATIONS (ATTACHED)

☐ NOT APPLICABLE

Big Rivers Electric Corporation
Annual MRSM Filing
Station Two Decommissioning Costs
December 31, 2020

		HMPL Share		
	Big Rivers	%	Amount	Total
Ramp Down	$ 2,006,245	22.76%	$ 591,172	$ 2,597,417
CCR Incremental Costs	109,815	22.76%	32,359	142,174
Ash Pond Closure	138,017	22.76%	40,669	178,686
Auxiliary Power	112,785	22.76%	33,234	146,019
Subtotal	2,366,862		697,434	3,064,296
Landfill Slurry Wall	2,269,195	9.88%	248,775	2,517,970
Landfill Leachate Project	1,294,581	9.88%	141,927	1,436,508
Landfill Drainage	897,767	9.88%	98,424	996,191
Subtotal	4,461,543		489,126	4,950,669
Transmission Assets	-		666	666
Total	$ 6,828,405		$ 1,187,226	$ 8,015,631

ORIGINAL

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF BIG RIVERS ELECTRIC CORPORATION FOR REVIEW OF ITS MRSM CHARGE FOR CALENDAR YEAR 2020	)))))	Case No. 2021-00061

DIRECT TESTIMONY

OF

JOHN WOLFRAM
PRINCIPAL OF CATALYST CONSULTING, LLC

ON BEHALF OF

BIG RIVERS ELECTRIC CORPORATION

FILED: February 26, 2021

DIRECT TESTIMONY

OF

JOHN WOLFRAM

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II. COST OF SERVICE STUDIES 3
III. CONCLUSION 15

DIRECT TESTIMONY

OF

JOHN WOLFRAM

I. <u>INTRODUCTION</u>

Q. Please state your name, business address and occupation.

A. My name is John Wolfram. I am the Principal of Catalyst Consulting LLC. My Business address is 3308 Haddon Road, Louisville, Kentucky 40241.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Big Rivers Electric Corporation ("Big Rivers").

Q. Please summarize your education and professional experience.

A. I received a Bachelor of Science degree in Electrical Engineering from the University of Notre Dame in 1990 and a Master of Science degree in Electrical Engineering from Drexel University in 1997. I founded Catalyst Consulting LLC in June 2012. From March 2010 through May 2012, I was a Senior Consultant with The Prime Group, LLC. I have developed cost of service studies and rates for numerous electric and gas utilities, including electric distribution cooperatives, generation and transmission ("G&T") cooperatives, municipal utilities and investor-owned utilities. I have performed economic analyses, rate mechanism reviews, ISO/RTO membership evaluations, and wholesale formula rate reviews. I have also been employed by the parent companies of Louisville Gas and Electric Company ("LG&E") and Kentucky Utilities Company ("KU"), by the PJM Interconnection, and by the Cincinnati Gas & Electric Company. A more detailed description of my qualifications is included in Exhibit Wolfram-1.

Q. Have you previously testified before the Kentucky Public Service Commission ("Commission")?

A. Yes. I have testified in numerous regulatory proceedings before this Commission. A listing of my testimony in other proceedings is included in Exhibit Wolfram-1.

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

A. The purpose of my testimony is to support the two cost of service studies ("COSS"), which I prepared on behalf of Big Rivers in compliance with the Commission's June 25, 2020, Order in Case No. 2020-00064 ("MRSM Order").[1]

[1] *In the Matter of: Electronic Application of Big Rivers Electric Corporation for Approval To Modify Its MRSM Tariff, Cease Deferring Depreciation Expenses, Establish Regulatory Assets, Amortize Regulatory Assets, and Other Appropriate Relief*, P.S.C. Case No. 2020-00064, Order at 26 (June 25, 2020).

Q. Are you sponsoring any Exhibits?

A. Yes. I have prepared the following exhibits to my testimony.

- Exhibit Wolfram-1 – Professional Summary;
- Exhibit Wolfram-2 – Functionalization and Classification;
- Exhibit Wolfram-3 – Allocation to Rate Classes – Option 1;
- Exhibit Wolfram-4 – Allocation to Rate Classes – Option 2;
- Exhibit Wolfram-5 – Billing Determinants;
- Exhibit Wolfram-6 – Allocators: Average & Excess, Purchased Power, and Off–System Sales;
- Exhibit Wolfram-7 – Summary of Returns;
- Exhibit Wolfram-8 – Summary of Rates.

II. <u>COST OF SERVICE STUDIES</u>

Q. What is the requirement of the MRSM Order that you address in your testimony?

A. The MRSM Order requires the following on page 26:

> BREC is to file a minimum of two fully allocated COSSs based upon NARUC approved methods during the 2021 annual filing of the New TIER Credit so that the Commission can determine whether there is a need to reevaluate the current LIC rate design.

Q. Did you prepare two fully allocated cost of service studies based upon methods approved by the National Association of Regulatory Utility Commissioners ("NARUC-Approved Methods") for Big Rivers?

A. Yes. I prepared two fully allocated, embedded cost of service studies based on unadjusted operating results for the twelve-month test year beginning January 1, 2019, and ending December 31, 2019. The objective in performing the cost of service studies is to assess Big Rivers' overall rate of return on rate base and to determine the relative rates of return that Big Rivers is earning from each rate class. The cost of service studies provide an indication as to whether each class is contributing its appropriate share of Big Rivers' cost of providing service and provide insight into the assessment of cost-based rates for each rate class.

Q. What procedure was used in performing the cost of service studies?

A. The three traditional steps of an embedded cost of service study – functionalization, classification, and allocation – were utilized in both studies. The cost of service studies were therefore prepared using the following procedure: (1) costs were functionalized to the major functional groups; (2) functionalized costs were classified as energy-related or demand-related; and then (3) functionalized classified costs were allocated to the rate classes.

Q. What methods did you use for allocating fixed production costs in the two cost of service studies?

A. I prepared the first cost of service study ("Option 1") using the 12 Coincident Peak ("12 CP") method, and the second cost of service study ("Option 2") using the Average and Excess ("A&E") method.

Q. Is the use of these methods standard in the electric utility industry?

A. Yes. The overall approach is consistent with the *NARUC Electric Utility Cost Allocation Manual* ("NARUC CAM") last published in January 1992. Furthermore, both methods for allocating fixed production costs are also NARUC-Approved Methods; the 12 CP method is described in the NARUC CAM on page 46 and the A&E method is described on pages 49-52.

Q. Have these approaches been accepted by the Commission in previous cases?

A. Yes. The Commission accepted the 12 CP approach in Big Rivers' last three rate filings.[2] The Commission accepted the A&E approach in at least two rate

[2] *See In the Matter of: Application of Big Rivers Electric Corporation for a General Adjustment in Rates*, Case No. 2011–00036; *In the Matter of: Application of Big Rivers Electric Corporation for a General Adjustment in Rates*, Case No. 2012–00535; and *In the Matter of: Application of Big Rivers Electric Corporation for a General Adjustment in Rates,* Case No. 2013–00199.

cases filed by East Kentucky Power Cooperative, in Case Nos. 94-336 and 2006-00472.

Q. What functional groups were used in the cost of service study?

A. The functional groups identified in the cost of service study are Production and Transmission costs. This is wholly appropriate for a G&T cooperative like Big Rivers that provides wholesale service to distribution cooperatives without providing the distribution function to retail consumers.

Q. How were costs classified as energy–related or demand–related in the cost of service study?

A. Classification provides a method of identifying the appropriate cost driver for each functionalized cost so that the service characteristics that give rise to the cost can serve as a basis for allocation. Costs classified as energy-related tend to vary with the amount of kilowatt hours consumed. Fuel and most purchased power expenses are examples of costs typically classified as energy costs. Costs classified as demand-related tend to vary with the capacity needs of customers, *i.e.*, they are size-related, such as the amount of generation or transmission equipment necessary to meet customers' needs.

The classification of all plant and expenses is performed consistent with the specifications for each account noted throughout the NARUC CAM.

Q. Have you prepared an exhibit showing the results of the functional assignment and classification steps of the cost of service studies?

A. Yes. Exhibit Wolfram-2 shows the results of the first two steps of the cost of service study – functionalization and classification. The functionalization and classification data is identical for both cost of service studies.

Q. In the cost of service model, once costs are functionalized and classified, how are these costs allocated to the customer classes?

A. In the cost of service model used in this study, Big Rivers' test-year costs are functionalized and classified using what are referred to in the model as "functional vectors." These vectors are multiplied (using scalar multiplication) by the various accounts in order to simultaneously assign costs to the functional groups and cost classifications (demand and energy). Therefore, Big Rivers' accounting costs are functionalized and classified using the explicitly determined functional vectors identified in the analysis and using internally generated functional vectors. These are shown on the last page of Exhibit Wolfram-2.

Once costs for all of the major accounts are functionalized and classified, the resultant cost matrix for the major cost groupings (*e.g.,* Plant in Service, Rate Base, Operation and Maintenance Expenses) is then transposed and allocated to the customer classes using "allocation vectors" or "allocation factors."

Because the two studies use different methods to allocate fixed production costs, the allocation factors for the two cost of service studies differ; for this reason, the results are presented in two exhibits.

The results of the class allocation step for Option 1 are included in Exhibit Wolfram-3. The costs shown in the column labeled "Total System" in Exhibit Wolfram-3 are carried forward from the functionalized and classified costs shown in Exhibit Wolfram-2. The column labeled "Ref" in Exhibit Wolfram-3 provides a reference to the results included in Exhibit Wolfram-2.

The results of the class allocation step for Option 2 are included in Exhibit Wolfram-4.

Q. Were the expense items in the cost of service studies filed in this proceeding classified and allocated in the same way they were in the cost of service study filed in the last rate filing in Case No. 2013-00199?

A. Yes, with a small number of exceptions. First, as mentioned before, the two studies use different methods to allocate fixed production costs to the rate classes, and only Option 1 uses the 12 CP approach that was accepted in the last rate case; Option 2 uses the A&E method that I will discuss later in my testimony.

Second, refinements were made to the classification of certain accounts to ensure that the approach was more consistent with the NARUC CAM. Pursuant to the Commission's directive in the MRSM Order, in order to ensure the application of NARUC-Approved Methods, I closely reviewed the classification of each individual account. For two accounts, I switched from the FERC[3] Predominance Method that was applied in the last filing to a more refined adherence to the NARUC CAM. More specifically, while the FERC Predominance Method permits the classification of costs to demand or energy based on predominant application, the NARUC CAM specifies a split of costs, where the labor expenses are classified as demand, and the material expenses are classified as energy. This was the case for Account 502 Steam Expenses and Account 505 Electric Expenses. (This is noted in the NARUC CAM on page 38, footnote 4.) The other accounts were classified in the same manner here as they were in Big Rivers' last rate filing.[4]

Q. What rate classes are included in the cost–of–service studies?

A. The rate classes include the Rural Delivery Service ("RDS") class and the Large Industrial Customer ("LIC") class.

---

[3] FERC = Federal Energy Regulatory Commission.

[4] *See In the Matter of: Application of Big Rivers Electric Corporation for a General Adjustment in Rates,* Case No. 2013–00199.

Q. How is test period data for the two rate classes used in the cost of service studies?

A. The actual 2019 demand and energy data for the RDS and LIC rate classes was used to develop allocators, and was used in financial calculations in both of the cost of service studies; this data is provided in Exhibit Wolfram-5.

Q. How are demand–related costs allocated in the cost of service studies?

A. In both studies, transmission demand-related costs are allocated using the 12 CP methodology. Here the costs are allocated on the basis of the sum of the twelve monthly coincident peak demands for each rate class. This is the same methodology used to classify transmission costs in the Midcontinent Independent System Operator, Inc. ("MISO") Tariff, approved by FERC, under which wholesale transmission service by Big Rivers is provided.

For Option 1, the production demand-related costs are also allocated using 12 CP, as they were in the last rate filing.[5]

For Option 2, production demand-related costs are allocated using the A&E method.

[5] *Ibid.*

Q. Please describe the A&E method.

A. The NARUC CAM describes the A&E method on page 49 as follows: "The method allocates production plant costs to rate classes using factors that combine the classes' average demands and the non-coincident peak (NCP) demands." Effectively, A&E classifies a portion of the fixed production costs as energy-related, that portion being determined by the utility's load factor. In other words, this method basically allocates production plant costs on the basis of average demand rather than on the basis of coincident peak demand. As the NARUC CAM also notes on page 49, it is "an appropriate method for the analyst to use." The determination of the A&E allocators is provided in Exhibit Wolfram-6, along with the determination of the classification of both Purchased Power and Off–System Sales between demand and energy used in both cost of service studies.

Q. How are energy–related costs allocated in the cost of service studies?

A. Energy-related costs are allocated on the basis of total test year kWh sales to each rate class.

Q. Please summarize the results of each cost of service study.

A. The following table summarizes the rates of return for each customer class from the cost of service studies. The rate of return on rate base was calculated by dividing the net utility operating margin by the net cost rate base, for each customer class and for the total system. This calculation is shown in more detail in Exhibit Wolfram-7. The class results for the two studies differ slightly due to the different allocation of fixed production cost to each class between the 12 CP method and the A&E method, but the total system results are identical as expected.

Table 1. Class Rates of Return (ROR)				
Rate Class	***Option 1: 12 CP***		***Option 2: A&E***	
	ROR[6]	**Unitized**[7]	**ROR**	**Unitized**
RDS	4.94%	1.002	5.05%	1.022
LIC	4.91%	0.995	4.57%	0.926
Total	4.93%	1.000	4.93%	1.000

Note that the class unitized rates of return are extremely close to 1.00. This indicates that in both studies, the Rurals and Large Industrials are each contributing almost equally to Big Rivers' overall margins, and that subsidization between the Rurals and Large Industrials is virtually non-existent.

[6] Rate of Return

[7] Unitized Rate of Return

Q. Please summarize the cost-based rates from each cost of service study.

A. The cost-based rates for Option 1 and Option 2 on a per-unit basis are listed on the last page of Exhibits Wolfram-3 and Wolfram-4, respectively, and are reproduced in Table 2 for convenience. These per-unit charges are on an "all-in" basis; in other words, they are *not* net of the riders for Fuel Adjustment Clause ("FAC"), Environmental Surcharge ("ES"), Non-Smelter Non-FAC PPA ("NSNFPPA"), or Member Rate Stability Mechanism ("MRSM"), and thus are not directly comparable to the per-unit charges in the RDS and LIC tariffs.

Table 2. Cost-Based Per-Unit Rates

Rate Component	***Option 1: 12 CP***		***Option 2: A&E***	
	RDS	**LIC**	**RDS**	**LIC**
Demand ($/kW)	22.7722	19.3591	22.6379	19.7571
Energy ($/kWh)	0.033295	0.033295	0.033295	0.033295

Q. Did you calculate cost-based rates on a tariff basis to permit the Commission to determine whether there is a need to reevaluate the current LIC rate design?

A. Yes. For Option 1 and 2, I calculated cost-based rates on a tariff basis. I began with the per-unit energy charges listed in Table 2 above (which notably are identical for both studies) and adjusted those to remove the effects of the FAC, the NSNFPPA, and the energy-related portion of the ES. This yields the energy charge on a basis comparable to that of the tariff rate. Then I computed the demand charge such that the overall class revenues (before applying the MRSM) were achieved while holding the other rate riders constant. I performed these steps for both the RDS and LIC classes and in both the Option 1 and Option 2 studies. The results are provided in Exhibit Wolfram-8.

Q. What do the studies show about the LIC rate design?

A. Both studies show that the current LIC energy charge is higher than cost-based and that the current LIC demand charge is lower than cost-based.

Q. How do the results of the two studies differ?

A. The two studies differ in the determination of cost-based energy and demand rates for the RDS and LIC rate classes. Even then, the results are remarkably similar. Because the A&E method allocates slightly less production demand cost to the RDS class than the 12 CP method does, the cost-based demand charge for RDS is slightly higher for Option 1 than it is for Option 2. Similarly, the cost-based demand charge for LIC is slightly lower for Option 1 than it is for Option 2.

Q. Do you prefer one method over the other?

A. Yes. While both methods are reasonable, in my view Option 1 is preferred over Option 2. Big Rivers has relied upon the 12 CP method in many rate filings, and for good reason; the monthly peak coincident demands are relatively consistent over the twelve month period and the 12 CP method embraces that fact by allocating costs in accordance with class contributions to peak demand over the full twelve months.

III. CONCLUSION

Q. What is your recommendation to the Commission in this case?

A. Because both of the cost of service studies described herein were prepared in accordance with NARUC-Approved Methods, both of which the Commission has historically accepted in other rate filings, and because the studies permit the Commission to determine whether there is a need to reevaluate the current LIC rate design, I recommend that the Commission accept the two cost of service studies and find that Big Rivers has fully complied with this filing obligation in the MRSM Order.

Q. Does this conclude your testimony?

A. Yes, it does.

BIG RIVERS ELECTRIC CORPORATION

ELECTRONIC APPLICATION OF
BIG RIVERS ELECTRIC CORPORATION
ANNUAL REPORT ON MRSM CREDIT
CASE NO. 2021-00061

VERIFICATION

I, John Wolfram, 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

John Wolfram

COMMONWEALTH OF KENTUCKY)
COUNTY OF JEFFERSON)

SUBSCRIBED AND SWORN TO before me by John Wolfram on this the 26th day of February, 2021.

Katherine R[illegible], KYNP16841
Notary Public, Kentucky State at Large

My Commission Expires October 31, 2024

JOHN WOLFRAM

Summary of Qualifications

Provides consulting services to investor-owned utilities, rural electric cooperatives, and municipal utilities regarding utility rate and regulatory filings, cost of service studies, wholesale and retail rate designs, tariffs and special contracts, formula rates, and other analyses.

Employment

CATALYST CONSULTING LLC — June 2012 – Present
Principal

Provide consulting services in the areas of tariff development, regulatory analysis, economic development, revenue requirements, cost of service, rate design, and other utility regulatory areas.

Provide utility clients assistance regarding regulatory policy and strategy; project management support for utilities involved in complex regulatory proceedings; process audits; state and federal regulatory filing development; cost of service development and support; the development of special rates, including economic development rates, to achieve strategic objectives; the development of rate alternatives for use with customers; and energy efficiency program development.

Prepare retail and wholesale rate schedules and/or filings submitted to the Federal Energy Regulatory Commission ("FERC"), state regulators, and/or Boards of Directors for electric and gas utilities.

THE PRIME GROUP, LLC — March 2010 – May 2012
Senior Consultant

LG&E and KU, Louisville, KY — 1997 - 2010
(Louisville Gas & Electric Company and Kentucky Utilities Company)
Director, Customer Service & Marketing (2006 - 2010)
Manager, Regulatory Affairs (2001 - 2006)
Lead Planning Engineer, Generation Planning (1998 - 2001)
Power Trader, LG&E Energy Marketing (1997 - 1998)

PJM INTERCONNECTION, LLC, Norristown, PA — 1990 - 1993; 1994 - 1997
Project Lead – PJM OASIS Project
Chair, Data Management Working Group

CINCINNATI GAS & ELECTRIC COMPANY, Cincinnati, OH — 1993 - 1994
Electrical Engineer - Energy Management System

Education

Bachelor of Science Degree in Electrical Engineering, University of Notre Dame, 1990
Master of Science Degree in Electrical Engineering, Drexel University, 1997
Leadership Louisville, 2006

Associations

Senior Member, Institute of Electrical and Electronics Engineers (“IEEE”)
IEEE Power Engineering Society

Expert Witness Testimony & Proceedings

FERC: Submitted direct testimony for TransCanyon Western Development, LLC in FERC Docket No. ER21-1065 regarding a proposed Transmission Formula Rate.

Submitted direct testimony for Cleco Power LLC in FERC Docket No. ER21-370 regarding a proposed rate schedule for Blackstart Service under Schedule 33 of the MISO Open Access Transmission, Energy and Operating Reserve Markets Tariff.

Submitted direct testimony for Constellation Mystic Power, LLC in FERC Docket No. ER18-1639-005 supporting a compliance filing for a cost-of-service rate for compensation for the continued operation of power plants in ISO New England.

Submitted direct testimony for DATC Path 15, LLC in FERC Docket No. ER20-1006 regarding a proposed wholesale transmission rate.

Submitted direct testimony for Tucson Electric Power Company in FERC Docket No. ER19-2019 regarding a proposed Transmission Formula Rate.

Submitted direct testimony for Cheyenne Light, Fuel & Power Company in FERC Docket No. ER19-697 regarding a proposed Transmission Formula Rate.

Supported Kansas City Power & Light in FERC Docket No. ER19-1861-000 regarding revisions to fixed depreciation rates in the KCP&L SPP Transmission Formula Rate.

Supported Westar Energy and Kansas Gas & Electric Company in FERC Docket No. ER19-269-000 regarding revisions to fixed depreciation rates in the Westar SPP Transmission Formula Rate.

Submitted direct testimony for Midwest Power Transmission Arkansas, LLC in FERC Docket No. ER15-2236 regarding a proposed Transmission Formula Rate.

Submitted direct testimony for Kanstar Transmission, LLC in FERC Docket No. ER15-2237 regarding a proposed Transmission Formula Rate.

Supported Westar Energy and Kansas Gas & Electric Company in FERC Docket Nos. FA15-9-000 and FA15-15-000 regarding an Audit of Compliance with Rates, Terms and Conditions of Westar’s Open Access Transmission Tariff and Formula Rates, Accounting Requirements of the Uniform System of Accounts, and Reporting Requirements of the FERC Form No. 1.

Submitted direct testimony for Westar Energy in FERC Docket Nos. ER14-804 and ER14-805 regarding proposed revisions to a Generation Formula Rate.

Supported Intermountain Rural Electric Association and Tri-State G&T in FERC Docket No. ER12-1589 regarding revisions to Public Service of Colorado's Transmission Formula Rate.

Supported Intermountain Rural Electric Association in FERC Docket No. ER11-2853 regarding revisions to Public Service of Colorado's Production Formula Rate.

Supported Kansas Gas & Electric Company in FERC Docket No. FA14-3-000 regarding an Audit of Compliance with Nuclear Plant Decommissioning Trust Fund Regulations and Accounting Practices.

Supported LG&E Energy LLC in FERC Docket No. PA05-9-000 regarding an Audit of Code of Conduct, Standards of Conduct, Market-Based Rate Tariff, and MISO's Open Access Transmission Tariff at LG&E Energy LLC.

Submitted remarks and served on expert panel in FERC Docket No. RM01-10-000 on May 21, 2002 in Standards of Conduct for Transmission Providers staff conference, regarding proposed rulemaking on the functional separation of wholesale transmission and bundled sales functions for electric and gas utilities.

Kansas: Submitted report for Westar Energy, Inc. in Docket No. 21-WCNE-103-GIE regarding plans and options for funding the decommissioning trust fund, depreciation expenses, and overall cost recovery in the event of premature closing of the Wolf Creek nuclear plant.

Submitted direct and rebuttal testimony for Westar Energy, Inc. in Docket No. 18-WSEE-328-RTS regarding overall rate design, prior rate case settlement commitments, lighting tariffs, an Electric Transit rate schedule, Electric Vehicle charging tariffs, and tariff general terms and conditions.

Submitted direct and rebuttal testimony for Westar Energy, Inc. in Docket No. 18-KG&E-303-CON regarding the Evaluation, Measurement and Verification ("EM&V") of an energy efficiency demand response program offered pursuant to a large industrial customer special contract.

Submitted report for Westar Energy, Inc. in Docket No. 18-WCNE-107-GIE regarding plans and options for funding the decommissioning trust fund, depreciation expenses, and overall cost recovery in the event of premature closing of the Wolf Creek nuclear plant.

Submitted direct and rebuttal testimony for Westar Energy, Inc. in Docket No. 15-WSEE-115-RTS regarding rate designs for large customer classes, establishment of a balancing account related to new rate options, establishment of a tracking mechanism for costs related to compliance with mandated cyber and physical security standards, other rate design issues, and revenue allocation.

Kentucky: Submitted direct testimony and responses to data requests on behalf of Licking Valley R.E.C.C. in Case No. 2020-00338 regarding revenue requirements, pro forma adjustments, cost of service and rate design in a streamlined rate case.

Submitted direct testimony and responses to data requests on behalf of Cumberland Valley Electric in Case No. 2020-00264 regarding revenue requirements, pro forma adjustments, cost of service and rate design in a streamlined rate case.

Submitted direct testimony and responses to data requests on behalf of Taylor County R.E.C.C. in Case No. 2020-00278 regarding the cost support and tariff changes for the implementation of a Prepay Metering Program.

Submitted direct testimony and responses to data requests on behalf of Meade County R.E.C.C. in Case No. 2020-00131 regarding revenue requirements, pro forma adjustments, cost of service and rate design in a streamlined rate case.

Submitted direct testimony and responses to data requests on behalf of Clark Energy Cooperative in Case No. 2020-00104 regarding revenue requirements, pro forma adjustments, cost of service and rate design in a streamlined rate case.

Submitted direct testimony and responses to data requests on behalf of Big Rivers Electric Corporation in Case No. 2019-00435 regarding an Environmental Compliance Plan and Environmental Surcharge rate mechanism.

Submitted direct testimony and responses to data requests on behalf of Jackson Energy Cooperative in Case No. 2019-00066 regarding revenue requirements, cost of service and rate design in a streamlined rate case.

Submitted direct testimony and responses to data requests on behalf of Jackson Purchase Energy Corporation in Case No. 2019-00053 regarding revenue requirements, pro forma adjustments, cost of service and rate design in a streamlined rate case.

Submitted direct testimony and data request responses on behalf of Big Rivers Electric Corporation in Case No. 2018-00146 regarding ratemaking issues associated with the anticipated termination of contracts regarding the operation of an electric generating plant owned by the City of Henderson, Kentucky.

Submitted direct testimony on behalf of fifteen distribution cooperative owner-members of East Kentucky Power Cooperative in Case No. 2018-00050 regarding the economic evaluation of and potential cost shift resulting from a proposed member purchased power agreement.

Submitted direct testimony on behalf of Big Sandy R.E.C.C. in Case No. 2017-00374 regarding revenue requirements, pro forma adjustments, cost of service and rate design in a base rate case.

Submitted direct testimony on behalf of Progress Metal Reclamation Company in Kentucky Power Company Case No. 2017-00179 regarding the potential implementation of a Load Retention Rate or revisions to an Economic Development Rate.

Submitted direct testimony on behalf of Kenergy Corp. and Big Rivers Electric Corporation in Case No. 2016-00117 regarding a marginal cost of service study in support of an economic development rate for a special contracts customer.

Submitted rebuttal testimony on behalf of Big Rivers Electric Corporation in Case No. 2014-00134 regarding ratemaking treatment of revenues associated with proposed wholesale market-based-rate purchased power agreements with entities in Nebraska.

Submitted direct and rebuttal testimony on behalf of Big Rivers Electric Corporation in Case No. 2013-00199 regarding revenue requirements, pro forma adjustments, cost of service and rate design in a base rate case.

Submitted direct and rebuttal testimony on behalf of Big Rivers Electric Corporation in Case No. 2012-00535 regarding revenue requirements, pro forma adjustments, cost of service and rate design in a base rate case.

Submitted direct and rebuttal testimony on behalf of Big Rivers Electric Corporation in Case No. 2012-00063 regarding an Environmental Compliance Plan and Environmental Surcharge rate mechanism.

Submitted direct, rebuttal, and rehearing direct testimony on behalf of Big Rivers Electric Corporation in Case No. 2011-00036 regarding revenue requirements and pro forma adjustments in a base rate case.

Submitted direct testimony for Louisville Gas & Electric Company in Case No. 2009-00549 and for Kentucky Utilities Company in Case No. 2009-00548 for adjustment of electric and gas base rates, in support of a new service offering for Low Emission Vehicles, revised special charges, and company offerings aimed at assisting customers.

Submitted discovery responses for Kentucky Utilities and/or Louisville Gas & Electric Company in various customer inquiry matters, including Case Nos. 2009-00421, 2009-00312, and 2009-00364.

Submitted discovery responses for Louisville Gas & Electric Company and Kentucky Utilities Company in Case No. 2008-00148 regarding the 2008 Joint Integrated Resource Plan.

Submitted discovery responses for Louisville Gas & Electric Company and Kentucky Utilities Company in Administrative Case No. 2007-00477 regarding an investigation of the energy and regulatory issues in Kentucky's 2007 Energy Act.

Submitted direct testimony for Louisville Gas & Electric Company and Kentucky Utilities Company in Case No. 2007-00319 for the review, modification, and continuation of Energy Efficiency Programs and DSM Cost Recovery Mechanisms.

Submitted direct testimony for Louisville Gas & Electric Company and Kentucky Utilities Company in Case No. 2007-00067 for approval of a proposed Green Energy program and associated tariff riders.

Submitted direct testimony for Louisville Gas & Electric Company and Kentucky Utilities Company in Case No. 2005-00467 and 2005-00472 regarding a Certificate of Public Convenience and Necessity for the construction of transmission facilities.

Submitted discovery responses for Kentucky Utilities in Case No. 2005-00405 regarding the transfer of a utility hydroelectric power plant to a private developer.

Submitted discovery responses for Louisville Gas & Electric Company and Kentucky Utilities Company in Case No. 2005-00162 for the 2005 Joint Integrated Resource Plan.

Presented company position for Louisville Gas & Electric Company and Kentucky Utilities Company at public meetings held in Case Nos. 2005-00142 and 2005-00154 regarding routes for proposed transmission lines.

Supported Louisville Gas & Electric Company and Kentucky Utilities Company in a Focused Management Audit of Fuel Procurement practices by Liberty Consulting in 2004.

Supported Louisville Gas & Electric Company and Kentucky Utilities Company in an Investigation into their Membership in the Midwest Independent Transmission System Operator, Inc. ("MISO") in Case No. 2003-00266.

Supported Louisville Gas & Electric Company and Kentucky Utilities Company in a Focused Management Audit of its Earning Sharing Mechanism by Barrington-Wellesley Group in 2002-2003.

Submitted direct testimony for Louisville Gas & Electric Company and Kentucky Utilities Company in Case No. 2002-00381 regarding a Certificate of Public Convenience and Necessity for the acquisition of four combustion turbines.

Submitted direct testimony for Louisville Gas & Electric Company and Kentucky Utilities Company in Case No. 2002-00029 regarding a Certificate of Public Convenience and Necessity for the acquisition of two combustion turbines.

Virginia: Submitted direct testimony for Kentucky Utilities Company d/b/a Old Dominion Power in Case No. PUE-2002-00570 regarding a Certificate of Public Convenience and Necessity for the acquisition of four combustion turbines.

Presentations

"Revisiting Rate Design Strategies" presented to APPA Public Power Forward Summit, November 2019.

"Utility Rates at the Crossroads" presented to APPA Business & Financial Conference, September 2019.

"New Developments in Kentucky Rate Filings" presented to Kentucky Electric Cooperatives Accountants' Association Summer Meeting, June 2019.

"Electric Rates: New Approaches to Ratemaking" presented to CFC Statewide Workshop for Directors, January 2019.

"The Great Rate Debate: Residential Demand Rates" presented to CFC Forum, June 2018.

"Benefits of Cost of Service Studies" presented to Tri-State Electric Cooperatives Accountants' Association Spring Meeting, April 2017.

“Proper Design of Utility Rate Incentives” presented to APPA/Area Development’s Public Power Consultants Forum, March 2017.

“Utility Hot Topics and Economic Development” presented to APPA/Area Development’s Public Power Consultants Forum, March 2017.

“Emerging Rate Designs” presented to CFC Independent Borrowers Executive Summit, November 2016.

“Optimizing Economic Development” presented to Grand River Dam Authority Municipal Customer Annual Meeting, September 2016.

“Tomorrow’s Electric Rate Designs, Today” presented to CFC Forum, June 2016.

“Reviewing Rate Class Composition to Support Sound Rate Design” presented to EEI Rate and Regulatory Analysts Group Meeting, May 2016.

“Taking Public Power Economic Development to the Next Level” presented to APPA/Area Development’s Public Power Consultants Forum, March 2016.

“Ratemaking for Environmental Compliance Plans” presented to NARUC Staff Subcommittee on Accounting and Finance Fall Conference, September 2015.

“Top Utility Strategies for Successful Attraction, Retention & Expansion” presented to APPA/Area Development’s Public Power Consultants Forum, March 2015.

“Economic Development and Load Retention Rates” presented to NARUC Staff Subcommittee on Accounting and Finance Fall Conference, September 2013.

“Rates for Distributed Generation” presented to 2010 Electric Cooperative Rate Conference, October 2010.

“What Utilities Can Do to Advance Energy Efficiency in Kentucky” panel session of Second Annual Kentucky Energy Efficiency Conference, October 2007.

<u>Articles</u>

“FERC Formula Rate Resurgence” *Public Utilities Fortnightly*, Vol. 158, No. 9, July 2020, 34-37.

“Economic Development Rates: Public Service or Piracy?” *IAEE Energy Forum*, International Association for Energy Economics, 2016 Q1 (January 2016), 17-20.

BIG RIVERS ELECTRIC CORPORATION
Cost of Service Study
Functionalization and Classification

12 Months Ended December 31, 2019

Description	Name	Allocation Vector	Total System	Production Demand	Production Energy	Transmission Demand
Plant in Service						
Intangible Plant						
Intangible Plant		PT&D	30,755,939	-	-	30,755,939
Total Intangible Plant	PINT		$ 30,755,939	$ -	$ -	$ 30,755,939
Steam Production						
Total Production Plant		F001	1,682,887,287	1,682,887,287	-	-
Total Steam Production Plant	PPROD		$ 1,682,887,287	$ 1,682,887,287	$ -	$ -
Transmission						
Total Transmission Plant		F003	284,109,520	-	-	284,109,520
Total Transmission Plant	PTRAN		$ 284,109,520	$ -	$ -	$ 284,109,520
Distribution						
Total Distribution Plant	PDIST		$ -	$ -	$ -	$ -
Total Transmission and Distribution Plant	PT&D		$ 284,109,520	$ -	$ -	$ 284,109,520
Total Production & Transmission Plant	PPT&D		$ 1,966,996,807	$ 1,682,887,287	$ -	$ 284,109,520
General Plant						
General Plant		PT&D	64,713,253	-	-	64,713,253
Total General Plant	PGP		$ 64,713,253	$ -	$ -	$ 64,713,253
Total Plant in Service	TPIS		$ 2,062,465,999	$ 1,682,887,287	$ -	$ 379,578,713
Construction Work in Progress (CWIP)						
CWIP		TPIS	35,662,645	29,099,249	-	6,563,396
Total Construction Work in Progress	TCWIP		$ 35,662,645	$ 29,099,249	$ -	$ 6,563,396
Total Utility Plant			$ 2,098,128,644	$ 1,711,986,536	$ -	$ 386,142,108

BIG RIVERS ELECTRIC CORPORATION
Cost of Service Study
Functionalization and Classification

12 Months Ended December 31, 2019

Description	Name	Allocation Vector	Total System	Production Demand	Production Energy	Transmission Demand
Rate Base						
Utility Plant						
Plant in Service			$ 2,062,465,999	$ 1,682,887,287	$ -	$ 379,578,713
Construction Work in Progress (CWIP)			35,662,645	29,099,249.32	-	6,563,395.94
Total Utility Plant	TUP		$ 2,098,128,644	$ 1,711,986,536	$ -	$ 386,142,108
Less: Acummulated Provision for Depreciation						
Production		PPROD	1,117,199,847	1,117,199,847	-	-
Transmission		PTRAN	158,538,682	-	-	158,538,682
General		TUP	32,973,027	26,904,632	-	6,068,395
Retirement Work in Progress		TUP	(290,778)	(237,263)	-	(53,515)
Other		TUP	(115,377,813)	(94,143,542)	-	(21,234,271)
Total Accumulated Depreciation & Amort	TADEPR		$ 1,193,042,964	$ 1,049,723,673	$ -	$ 143,319,291
Net Utility Plant	NTPLANT		$ 905,085,680	$ 662,262,862	$ -	$ 242,822,817
Working Capital						
Cash Working Capital - Operation and Maintenance Expenses		OMLPP	$ 30,361,333	4,986,971	21,018,336	4,356,026
Materials and Supplies (13-Month Avg)		TPIS	23,814,495	19,431,647	-	4,382,848
Prepayments (13-Month Average)		TPIS	692,851	565,338	-	127,513
Fuel Stock (13-Month Average)		TPIS	25,133,677	20,508,045	-	4,625,632
Total Working Capital	TWC		$ 80,002,356	$ 45,492,001	$ 21,018,336	$ 13,492,019
Less: Customer Deposits		TPIS	$ (2,000)	(1,632)	-	(368)
Net Rate Base	RB		$ 985,090,036	$ 707,756,495	$ 21,018,336	$ 256,315,205

BIG RIVERS ELECTRIC CORPORATION
Cost of Service Study
Functionalization and Classification

12 Months Ended December 31, 2019

Description	Name	Allocation Vector		Total System		Production Demand		Production Energy		Transmission Demand
Operation and Maintenance Expenses										
Steam Power Production Operations Expense										
500 OPERATION SUPV AND ENGINEERING	OM500	F001	$	6,013,447		6,013,447		-		-
501 FUEL	OM501	F002		119,514,584		-		119,514,584		-
502 STEAM EXPENSES	OM502	F004		28,929,114		7,759,549		21,169,565		-
503 STEAM FROM OTHER SOURCES	OM503	F002		-		-		-		-
504 STEAM TRANSFERRED - CREDIT	OM504	F002		-		-		-		-
505 ELECTRIC EXPENSES	OM505	F005		4,557,075		3,327,722		1,229,353		-
506 MISC STEAM POWER EXPENSES	OM506	F001		6,348,135		6,348,135		-		-
507 RENTS	OM507	F001		-		-		-		-
509 ALLOWANCES	OM509	F002		2,570		-		2,570		-
Total Steam Production Operation Expense	OMPO		$	165,364,925	$	23,448,853	$	141,916,071	$	-
Steam Power Production Maintenance Expense										
510 MAINENANCE SUPV AND ENGINEERING	OM510	F001	$	3,210,543		3,210,543		-		-
511 MAINTENANCE OF STRUCTURES	OM511	F001		3,003,562		3,003,562		-		-
512 MAINTENANCE OF BOILER PLANT	OM512	F002		21,363,995		-		21,363,995		-
513 MAINTENANCE OF ELECTRIC PLANT	OM513	F002		2,324,429		-		2,324,429		-
514 MAINTENANCE OF MISC STEAM PLANT	OM514	F002		2,225,821		-		2,225,821		-
Total Steam Production Maintenance Expense	OMPM		$	32,128,349	$	6,214,105	$	25,914,244	$	-
Other Power Production Operations Expense										
546 OPERATION SUPV AND ENGINEERING	OM546	F001	$	6,583		6,583		-		-
547 FUEL	OM547	F002		316,373		-		316,373		-
548 GENERATION EXPENSES	OM548	F001		29,710		29,710		-		-
549 MISC STEAM POWER EXPENSES	OM549	F001		30,956		30,956		-		-
550 RENTS	OM550	F001		-		-		-		-
Total Other Production Operation Expense			$	383,621	$	67,248	$	316,373	$	-
Other Power Production Maintenance Expense										
551 MAINENANCE SUPV AND ENGINEERING	OM551	F001	$	6,600		6,600		-		-
552 MAINTENANCE OF STRUCTURES	OM552	F001		906		906		-		-
553 MAINTENANCE OF GEN & ELEC EQUIP	OM553	F001		101,678		101,678		-		-
554 MAINTENANCE OF MISC OTHER POWER PLANT	OM554	F001		7,081		7,081		-		-
Total Other Production Maintenance Expense			$	116,264	$	116,264	$	-	$	-
Total Production Operation and Maintenance Expenses	OMP			197,993,158		29,846,470		168,146,688		-

Description	Name	Allocation Vector		Total System		Production Demand		Production Energy		Transmission Demand
Operation and Maintenance Expenses (Continued)										
Purchased Power										
555 PURCHASED POWER	OM555	OMPP	$	34,914,517	$	2,102,006	$	32,812,511		-
556 SYSTEM CONTROL & LOAD DISPATCHING	OM556	F001		-		-		-		-
557 OTHER EXPENSES	OM557	F001		2,978,724		2,978,724		-		-
Total Purchased Power	TPP		$	37,893,241	$	5,080,730	$	32,812,511	$	-
Transmission Expenses										
560 OPERATION SUPERVISION AND ENG	OM560	PTRAN	$	662,802		-		-		662,802
561 LOAD DISPATCHING	OM561	PTRAN		2,406,501		-		-		2,406,501
562 STATION EXPENSES	OM562	PTRAN		667,452		-		-		667,452
563 OVERHEAD LINE EXPENSES	OM563	PTRAN		1,109,315		-		-		1,109,315
564 UNDERGROUND LINE EXPENSES	OM564	PTRAN		-		-		-		-
565 TRANSMISION OF ELEC BY OTHERS	OM565	PTRAN		1,657,486		-		-		1,657,486
566 MISC. TRANSMISSION EXPENSES	OM566	PTRAN		599,669		-		-		599,669
567 RENTS	OM567	PTRAN		15,055		-		-		15,055
568 MAINTENANCE SUPERVISION AND ENG	OM568	PTRAN		628,451		-		-		628,451
569 MAINTENANCE OF STRUCTURES	OM569	PTRAN		20,831		-		-		20,831
570 MAINT OF STATION EQUIPMENT	OM570	PTRAN		2,054,552		-		-		2,054,552
571 MAINT OF OVERHEAD LINES	OM571	PTRAN		2,375,293		-		-		2,375,293
572 MAINT OF UNDERGROUND LINES	OM572	PTRAN		-		-		-		-
573 MAINT MISC	OM573	PTRAN		1,561,559		-		-		1,561,559
575 MARKET FACILITATION MONITORING MISO	OM574	PTRAN		1,005,132		-		-		1,005,132
Total Transmission Expenses			$	14,764,098	$	-	$	-	$	14,764,098
Transmission Expenses				14,764,098		-		-		14,764,098
Steam Production and Transmission Expenses				212,757,257		29,846,470		168,146,688		14,764,098
Production, Purchased Power, and Trans Expenses	OMSUB		$	250,650,498	$	34,927,201	$	200,959,199	$	14,764,098

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Description	Name	Allocation Vector	Total System	Production Demand	Production Energy	Transmission Demand
Operation and Maintenance Expenses (Continued)						
Customer Accounts Expense						
901 SUPERVISION/CUSTOMER ACCTS	OM901	TUP	$ -	-	-	-
902 METER READING EXPENSES	OM902	TUP	-	-	-	-
903 RECORDS AND COLLECTION	OM903	TUP	-	-	-	-
904 UNCOLLECTIBLE ACCOUNTS	OM904	TUP	-	-	-	-
905 MISC CUST ACCOUNTS	OM905	TUP	-	-	-	-
Total Customer Accounts Expense	OMCA		$ -	$ -	$ -	$ -
Customer Service Expense						
907 SUPERVISION	OM907	TUP	$ -	-	-	-
908 CUSTOMER ASSISTANCE EXPENSES	OM908	TUP	622,740	508,130	-	114,610
908 CUSTOMER ASSISTANCE EXP-LOAD MGMT	OM908LM	TUP	-	-	-	-
909 INFORMATIONAL AND INSTRUCTIONA	OM909	TUP	29,888	24,388	-	5,501
909 INFORM AND INSTRUC -LOAD MGMT	OM909LM	TUP	-	-	-	-
910 MISCELLANEOUS CUSTOMER SERVICE	OM910	TUP	-	-	-	-
911 SUPERVISION	OM911	TUP	-	-	-	-
912 DEMONSTRATION AND SELLING EXP	OM912	TUP	-	-	-	-
913 ADVERTISING EXPENSES	OM913	TUP	136,876	111,685	-	25,191
914 SALES	OM914	TUP	-	-	-	-
916 MISC SALES EXPENSE	OM916	TUP	-	-	-	-
917 MISC SALES EXPENSE	OM917	TUP	-	-	-	-
Total Customer Service Expense	OMCS		$ 789,504	$ 644,203	$ -	$ 145,301
Sub-Total Trans, Distrib, Cust Acct and Cust Service	OMSUB2		15,553,603	644,203	-	14,909,400
Administrative and General Expense						
920 ADMIN. & GEN. SALARIES-	OM920	OMSUB2	$ 14,981,431	620,505	-	14,360,926
921 OFFICE SUPPLIES AND EXPENSES	OM921	LBSUB2	6,501,673	5,305,098	-	1,196,576
923 OUTSIDE SERVICES EMPLOYED	OM923	OMSUB2	958,835	39,713	-	919,122
924 PROPERTY INSURANCE	OM924	NTPLANT	-	-	-	-
925 INJURIES AND DAMAGES - INSURAN	OM925	LBSUB2	3,779,233	3,083,698	-	695,535
926 EMPLOYEE BENEFITS	OM926	LBSUB2	129,900	105,993	-	23,907
928 ASSOCIATED DUES	OM928	OMSUB2	615,039	25,474	-	589,566
929 DUPLICATE CHARGES - CREDIT	OM929	OMSUB2	-	-	-	-
930 MISCELLANEOUS GENERAL EXPENSES	OM930	OMSUB2	2,195,072	90,916	-	2,104,156
931 RENTS AND LEASES	OM931	NTPLANT	1,933	1,414	-	519
932 MAINTENANCE OF GENERAL PLANT	OM932	PGP	-		-	-
935 MAINT OF GENERAL PLANT	OM935	NTPLANT	180,789	132,285	-	48,503
Total Administrative and General Expense	OMAG		$ 29,343,905	$ 9,405,097	$ -	$ 19,938,808
Total Operation and Maintenance Expenses	TOM		$ 280,783,907	$ 44,976,500	$ 200,959,199	$ 34,848,208
Operation and Maintenance Exp Less Purchase Power	OMLPP		$ 242,890,666	$ 39,895,770	$ 168,146,688	$ 34,848,208

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12 Months Ended December 31, 2019

Description	Name	Allocation Vector		Total System	Production Demand	Production Energy	Transmission Demand
<u>Other Expenses</u>							
Depreciation Expenses							
Steam Prod Plant	DEPRPP	PPROD		10,648,372	10,648,372	-	-
Transmission	DEPRTP	PTRAN		5,710,550	-	-	5,710,550
General	DEPRDP2	TUP		4,389,074	3,581,303	-	807,770
ARO	DEPRDP3	TUP		-	-	-	-
Amortization Expense	DEPRDP3	TUP		160,452	130,922	-	29,530
Amortization Expense	DEPRDP4	TUP		-	-	-	-
Regulatory Debits-DSM	DEPRDP3	TUP		704,839	575,120	-	129,719
Regulatory Debits - TIER Credit	DEPRDP4	TUP		27,742,669	22,636,875	-	5,105,794
Total Depreciation Expense	TDEPR		$	49,355,956	37,572,592	-	11,783,363
Property Taxes	PTAX	NTPLANT	$	-	-	-	-
Other Taxes	OT	NTPLANT	$	(26,170)	(19,149)	-	(7,021)
Interest -- LTD	INTLTD	NTPLANT	$	37,143,611	27,178,459	-	9,965,152
Interest -- Charged to Construction	INTCTC	NTPLANT	$	(206,529)	(151,120)	-	(55,409)
Interest -- Other	INTOTH	NTPLANT	$	-	-	-	-
Donations, Civic, Political Expense	DONAT	NTPLANT	$	166,140	121,567	-	44,573
Other Deductions	DEDUCT	NTPLANT	$	530,071	387,860	-	142,211
Total Other Expenses	TOE		$	86,963,079	$ 65,090,209	$ -	$ 21,872,870
Total Cost of Service (O&M + Other Expenses)			$	367,746,986	$ 110,066,709	$ 200,959,199	$ 56,721,077

Description	Name	Allocation Vector		Total System		Production Demand		Production Energy		Transmission Demand
Labor Expenses - for Labor Allocator										
Steam Power Production Operations Expense										
500 OPERATION SUPV AND ENGINEERING	LB500	OM500	$	6,013,447		6,013,447		-		-
501 FUEL	LB501	OM501		3,424,128		-		3,424,128		-
502 STEAM EXPENSES	LB502	OM502		7,759,549		2,081,315		5,678,234		-
503 STEAM FROM OTHER SOURCES	LB503	OM503		-		-		-		-
504 STEAM TRANSFERRED - CREDIT	LB504	OM504		-		-		-		-
505 ELECTRIC EXPENSES	LB505	OM505		3,327,722		2,430,009		897,713		-
506 MISC STEAM POWER EXPENSES	LB506	OM506		683,325		683,325		-		-
507 RENTS	LB507	OM507		-		-		-		-
509 ALLOWANCES	LB509	OM509		-		-		-		-
Total Steam Production Operation Expense	LBPO		$	21,208,171	$	11,208,096	$	10,000,075	$	-
Steam Power Production Maintenance Expense										
510 MAINENANCE SUPV AND ENGINEERING	LB510	OM510	$	3,210,543		3,210,543		-		-
511 MAINTENANCE OF STRUCTURES	LB511	OM511		1,057,812		1,057,812		-		-
512 MAINTENANCE OF BOILER PLANT	LB512	OM512		6,638,689		-		6,638,689		-
513 MAINTENANCE OF ELECTRIC PLANT	LB513	OM513		1,079,990		-		1,079,990		-
514 MAINTENANCE OF MISC STEAM PLANT	LB514	OM514		622,410		-		622,410		-
Total Steam Production Maintenance Expense	LBPM		$	12,609,443	$	4,268,355	$	8,341,088	$	-
Other Power Production Operations Expense										
546 OPERATION SUPV AND ENGINEERING		OM546	$	6,583		6,583		-		-
547 FUEL		OM547		-		-		-		-
548 GENERATION EXPENSES		OM548		-		-		-		-
549 MISC STEAM POWER EXPENSES		OM549		2,134		2,134		-		-
550 RENTS		OM550		-		-		-		-
Total Other Production Operation Expense	LBOPO		$	8,717	$	8,717	$	-	$	-
Other Power Production Maintenance Expense										
551 MAINENANCE SUPV AND ENGINEERING		OM551	$	6,600		6,600		-		-
552 MAINTENANCE OF STRUCTURES		OM552	$	953		953		-		-
553 MAINTENANCE OF GEN & ELEC EQUIP		OM553	$	40,526		40,526		-		-
554 MAINTENANCE OF MISC OTHER POWER PLANT		OM554	$	1,210		1,210		-		-
Total Other Production Maintenance Expense	LBOPM		$	49,288	$	49,288	$	-	$	-
Total Production Operation and Maintenance Expenses	LBP		$	33,875,619	$	15,534,456	$	18,341,163	$	-

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Description	Name	Allocation Vector		Total System		Production Demand		Production Energy		Transmission Demand
Labor Expenses (Continued)										
Purchased Power										
555 PURCHASED POWER	LB555	OM555	$	586,608		35,316		551,292		-
557 OTHER EXPENSES	LB557	OM557		-		-		-		-
Total Purchased Power Labor	LBPP		$	586,608	$	35,316	$	551,292	$	-
Transmission Labor Expenses										
560 OPERATION SUPERVISION AND ENG	LB560	OM560	$	574,514		-		-		574,514
561 LOAD DISPATCHING	LB561	OM561		1,350,065		-		-		1,350,065
562 STATION EXPENSES	LB562	OM562		204,895		-		-		204,895
563 OVERHEAD LINE EXPENSES	LB563	OM563		45,225		-		-		45,225
566 MISC. TRANSMISSION EXPENSES	LB566	OM566		291,540		-		-		291,540
568 MAINTENACE SUPERVISION AND ENG	LB568	OM568		545,900		-		-		545,900
569 MAINTENACE STRUCTURES	LB569	OM569		-		-		-		-
570 MAINT OF STATION EQUIPMENT	LB570	OM570		1,657,026		-		-		1,657,026
571 MAINT OF OVERHEAD LINES	LB571	OM571		1,270,366		-		-		1,270,366
573 MAINT OF MISC LINES	LB571	OM573		187,102		-		-		187,102
Total Transmission Labor Expenses	LBTRAN		$	6,126,633	$	-	$	-	$	6,126,633
Purchased Power, Transmission Labor Expenses	LBSUB1		$	6,713,242	$	35,316	$	551,292	$	6,126,633
Customer Accounts Expense										
901 SUPERVISION/CUSTOMER ACCTS	LB901	OM901	$	-		-		-		-
902 METER READING EXPENSES	LB902	OM902		-		-		-		-
903 RECORDS AND COLLECTION	LB903	OM903		-		-		-		-
904 UNCOLLECTIBLE ACCOUNTS	LB904	OM904		-		-		-		-
905 MISC CUST ACCOUNTS	LB903	OM905		-		-		-		-
Total Customer Accounts Labor Expense	LBCA		$	-	$	-	$	-	$	-
Customer Service Expense										
907 SUPERVISION	LB907	OM907	$	-		-		-		-
908 CUSTOMER ASSISTANCE EXPENSES	LB908	OM908		303,133		247,344		-		55,789
908 CUSTOMER ASSISTANCE EXP-LOAD MGMT	LB908x	OM908LM		-		-		-		-
909 INFORMATIONAL AND INSTRUCTIONA	LB909	OM909		-		-		-		-
909 INFORM AND INSTRUC -LOAD MGMT	LB909x	OM909LM		-		-		-		-
910 MISCELLANEOUS CUSTOMER SERVICE	LB910	OM910		-		-		-		-
911 SUPERVISION	LB911	OM911		-		-		-		-
912 DEMONSTRATION AND SELLING EXP	LB912	OM912		-		-		-		-
913 WATER HEATER - HEAT PUMP PROGRAM	LB913	OM913		-		-		-		-
916 MISC SALES EXPENSE	LB916	OM916		-		-		-		-
Total Customer Service Labor Expense	LBCS		$	303,133	$	247,344	$	-	$	55,789
Sub-Total Trans, Cust Acct and Cust Service Labor Exp	LBSUB2			303,133		247,344		-		55,789

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Description	Name	Allocation Vector		Total System		Production Demand		Production Energy		Transmission Demand
Labor Expenses (Continued)										
Administrative and General Expense										
920 ADMIN. & GEN. SALARIES-	LB920	OM920	$	14,981,431		620,505		-		14,360,926
921 OFFICE SUPPLIES AND EXPENSES	LB921	OM921		(93,839)		(76,569)		-		(17,270)
923 OUTSIDE SERVICES EMPLOYED	LB923	OM923		-		-		-		-
924 PROPERTY INSURANCE	LB924	OM924		-		-		-		-
925 INJURIES AND DAMAGES - INSURAN	LB925	OM925		-		-		-		-
926 EMPLOYEE BENEFITS	LB926	OM926		(187,501)		(152,993)		-		(34,508)
928 REGULATORY COMMISSION EXPENSES	LB928	OM928		-		-		-		-
929 DUPLICATE CHARGES-CR	LB929	OM929		-		-		-		-
930 MISCELLANEOUS GENERAL EXPENSES	LB930	OM930		-		-		-		-
931 RENTS AND LEASES	LB931	OM931		-		-		-		-
932 GENERAL	LB932	OM932		-		-		-		-
935 MAINT OF GENERAL PLANT	LB950	OM935		80,097		58,608		-		21,489
Total Administrative and General Expense	LBAG		$	14,780,187	$	449,551	$	-	$	14,330,637
Total Operation and Maintenance Expenses	TLB		$	55,672,182	$	16,266,667	$	18,892,455	$	20,513,059
Operation and Maintenance Expenses Less Purchase Power	LBLPP		$	55,085,573	$	16,231,351	$	18,341,163	$	20,513,059
Functional Vectors										
Production Demand	F001			1.000000		1.000000		0.000000		0.000000
Production Energy	F002			1.000000		0.000000		1.000000		0.000000
Transmission Demand	F003			1.000000		0.000000		0.000000		1.000000
Production 502 Labor vs Material Exp	F004			1.000000		0.268226		0.731774		0.000000
Production 505 Labor vs Material Exp	F005			1.000000		0.730232		0.269768		0.000000
Purchased Power	OMPP			1.000000		0.060204		0.939796		
Purchased Power Energy	OMPPE			1.000000		0.000000		1.000000		-
Purchased Power Demand	OMPPD			1.000000		1.000000		0.000000		-
Internally Generated Functional Vectors										
Total Transmission Plant		PTRAN		1.000000		-		-		1.000000
Operation and Maintenance Exp Less Purchased Power		OMLPP		1.000000		0.164254		0.692273		0.143473
Total Plant in Service		TPIS		1.000000		0.815959		-		0.184041
Total Operation and Maintenance Expenses (Labor)		TLB		1.000000		0.292187		0.339352		0.368462
Sub-Total Prod, Trans, Cust Acct and Cust Service		OMSUB2		1.000000		0.041418		-		0.958582
Total Steam Power Operation Expenses (Labor)		LBPO		1.000000		0.528480		0.471520		-
Total Steam Power Generation Maint Exp (Labor)		LBPM		1.000000		0.338505		0.661495		-
Total Transmission Labor Expenses		LBTRAN		1.000000		-		-		1.000000
Total General Plant		PGP		1.000000		-		-		1.000000
Total Production Plant		PPROD		1.000000		1.000000		-		-
Total Intangible Plant		PINT		1.000000		-		-		1.000000
Net Utility Plant		NTPLANT		1.000000		0.731713		-		0.268287

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Description	Name	Allocation Vector		Total System		Rural Delivery Service RDS		Large Industrial Customer LIC
Plant in Service								
Production & Purchase Power								
Demand	PLPPD	PPDA	$	1,682,887,287	$	1,302,464,791	$	380,422,496
Energy	PLPPE	PPEA		-	$	-	$	-
Total Power Supply	PLPPT		$	1,682,887,287	$	1,302,464,791	$	380,422,496
Transmission								
Demand	PLTD	TA1	$	379,578,713	$	293,773,631	$	85,805,082
Total	PLT		$	2,062,465,999	$	1,596,238,422	$	466,227,577
				1.0000		0.7739		0.2261
Net Utility Plant								
Production & Purchase Power								
Demand	NPPPD	PPDA	$	662,262,862	$	512,556,050	$	149,706,812
Energy	NPPPE	PPEA		-	$	-	$	-
Total Power Supply	NPPPT			662,262,862	$	512,556,050	$	149,706,812
Transmission								
Demand	NPTD	TA1	$	242,822,817	$	187,931,879	$	54,890,938
Total	NPT		$	905,085,680	$	700,487,930	$	204,597,750
				1.0000		0.7739		0.2261

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Description	Name	Allocation Vector		Total System		Rural Delivery Service RDS		Large Industrial Customer LIC
Net Cost Rate Base								
Production & Purchase Power								
Demand	RBPPD	PPDA	$	707,756,495	$	547,765,690	$	159,990,805
Energy	RBPPE	PPEA		21,018,336	$	14,818,161	$	6,200,175
Total Power Supply	RBPPT			728,774,831	$	562,583,851	$	166,190,980
Transmission								
Demand	RBTD	TA1	$	256,315,205	$	198,374,266	$	57,940,939
Total	RBT		$	985,090,036	$	760,958,117	$	224,131,919
				1.0000		0.7725		0.2275
Operation and Maintenance Expenses								
Production & Purchase Power								
Demand	OMPPD	PPDA	$	44,976,500	$	34,809,407	$	10,167,094
Energy	OMPPE	PPEA		200,959,199	$	141,678,476	$	59,280,723
Total Power Supply	OMPPT			245,935,699	$	176,487,883	$	69,447,817
Transmission								
Demand	OMTD	TOMA	$	34,848,208	$	26,970,650	$	7,877,558
Total	OMT		$	280,783,907	$	203,458,533	$	77,325,375
				1.0000		0.7246		0.2754

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Description	Name	Allocation Vector		Total System		Rural Delivery Service RDS		Large Industrial Customer LIC
Depreciation Expenses								
Production & Purchase Power								
Demand	DPPPD	PPDA	$	37,572,592	$	29,079,178	$	8,493,415
Energy	DPPPE	PPEA		-	$	-	$	-
Total Power Supply	DPPPT			37,572,592	$	29,079,178	$	8,493,415
Transmission								
Demand	DPTD	TA1	$	11,783,363	$	9,119,693	$	2,663,670
Total	DPT		$	49,355,956	$	38,198,871	$	11,157,085
				1.0000		0.7739		0.2261
Property Taxes								
Production & Purchase Power								
Demand	PTPPD	PPDA	$	-	$	-	$	-
Energy	PTPPE	PPEA		-	$	-	$	-
Total Power Supply	PTPPT			-	$	-	$	-
Transmission								
Demand	PTTD	TOMA	$	-	$	-	$	-
Total	PTT		$	-	$	-	$	-
				-		-		-

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Description	Name	Allocation Vector		Total System		Rural Delivery Service RDS		Large Industrial Customer LIC
<u>Other Taxes</u>								
Production & Purchase Power								
Demand	OTPPD	PPDA	$	(19,149)	$	(14,820)	$	(4,329)
Energy	OTPPE	PPEA		-	$	-	$	-
Total Power Supply	OTPPT			(19,149)	$	(14,820)	$	(4,329)
Transmission								
Demand	OTTD	TOMA	$	(7,021)	$	(5,434)	$	(1,587)
Total	OTT		$	(26,170)	$	(20,254)	$	(5,916)
				1.0000		0.7739		0.2261
<u>Cost of Service Summary -- Unadjusted Results</u>								
Operating Revenues								
Total Sales of Electric Energy	REVUC	R01	$	260,461,979	$	195,139,886	$	65,322,092
Off System Sales Revenues		E01	$	101,789,993	$	71,763,080	$	30,026,913
Other Electric Revenues		R01	$	16,474,972	$	12,343,161	$	4,131,811
Total Operating Revenues	TOR		$	378,726,944	$	279,246,128	$	99,480,816
				1.0000		0.7373		0.2627
Operating Expenses								
Operation and Maintenance Expenses			$	280,783,907	$	203,458,533	$	77,325,375
Depreciation and Amortization Expenses				49,355,956		38,198,871		11,157,085
Property Taxes		NPT		-		-		-
Other Taxes				(26,170)		(20,254)		(5,916)
Total Operating Expenses	TOE		$	330,113,693	$	241,637,149	$	88,476,543
Utility Operating Margin	TOM		$	48,613,252	$	37,608,979	$	11,004,273
Net Cost Rate Base			$	985,090,036	$	760,958,117	$	224,131,919
Rate of Return				**4.93%**		**4.94%**		**4.91%**
Unitized Rate of Return				**1.000**		**1.002**		**0.995**

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Description	Name	Allocation Vector		Total System		Rural Delivery Service RDS		Large Industrial Customer LIC
Allocation Factors								
Energy Allocation Factors								
Energy Usage by Class	E01	Energy		1.000000		0.705011		0.294989
Demand Allocation Factors								
Total Power Supply	D01	12CP		1.000000		0.773947		0.226053
Station Equipment -- Maximum Class Demand	D02	NCP		1.000000		0.768650		0.231350
Primary Distribution Plant -- Maximum Class Demand	D03	NCP		1.000000		0.768650		0.231350
Winter CP Demands	WCP			4,991,270		3,845,909		1,145,361
Summer CP Demands	SCP			1,784,391		1,398,091		386,300
12 Month Sum of Coincident Demands	12CP			6,775,662		5,244,000		1,531,662
Class Maximum Demands	NCP			537,480		413,134		124,346
Sum of the Individual Customer Demands	SICD			7,398,555		5,628,723		1,769,832
Average & Excess Allocators	A&E			1.000000		0.767278		0.232722
Reserved				1.000000		-		1.000000
Reserved				1.000000		0.500000		0.500000
Other Allocation Factors								
Rev	R01			260,461,979		195,139,886		65,322,092
Energy	E01			3,207,139,532		2,261,069,130		946,070,402
Loss Factor				0.020		0.020		0.020
Energy Including Losses	Energy			3,273,259,371		2,307,684,354		965,575,017
Customers (Monthly Bills)				-		-		-
Average Customers (Bills/12)	CUST			-		-		-
Allocation Factors: Labor Expenses								
Production & Purchase Power								
Demand	LBPPD	PPDA	$	16,231,351	$	12,562,198	$	3,669,153
Energy	LBPPE	PPEA		18,341,163	$	12,930,725	$	5,410,439
Total Power Supply	LBPPT			34,572,514	$	25,492,922	$	9,079,592

BIG RIVERS ELECTRIC CORPORATION
Cost of Service Study
Class Allocation
12 Months Ended December 31, 2019
-- OPTION 1 --

Description	Name	Allocation Vector		Total System		Rural Delivery Service RDS		Large Industrial Customer LIC
Allocation Factors: Labor Expenses (cont.)								
Transmission								
Demand	LBTD	TOMA	$	20,513,059	$	15,876,011	$	4,637,048
Total	LBT		$	55,085,573	$	41,368,934	$	13,716,640
Allocation Factors - Functionalized								
Transmission Residual Demand Allocator	TRDA			6,775,662		5,244,000		1,531,662
Transmission Plant In Service			$	284,109,520				
Customer Specific Assignment								
Transmission Residual		TRDA	$	284,109,520	$	219,885,580	$	64,223,940
Transmission Total	TA1		$	284,109,520	$	219,885,580	$	64,223,940
Transmission Plant Allocator	T01	TA1		-		-		-
Transmission Residual Demand Allocator	TOMDA			6,775,662		5,244,000		1,531,662
Transmission Plant In Service			$	284,109,520				
Customer Specific Assignment			$	-		-		-
Transmission Residual		TOMDA	$	284,109,520	$	219,885,580	$	64,223,940
Transmission Total	TOMA		$	284,109,520	$	219,885,580	$	64,223,940
Transmission O&M Allocator	T02	TOMA		-		-		-
Power Supply Residual Demand Allocator	PPDRA	12CP		6,775,662		5,244,000		1,531,662
Power Supply Demand Costs			$	44,976,500				
Customer Specific Assignment			$	-	$	-	$	-
Power Supply Demand Residual		PPDRA	$	44,976,500.337	$	34,809,407	$	10,167,094
Power Supply Demand Total	PPDT		$	44,976,500	$	34,809,407	$	10,167,094
Power Supply Demand Allocator	PPDA	PPDT		1.000000		0.77395		0.22605
Power Supply Residual Energy Allocator	PPERA			3,207,139,532		2,261,069,130		946,070,402
Power Supply Energy Costs			$	200,959,199				
Customer Specific Assignment			$	-		-		-
Power Supply Energy Residual		PPERA	$	200,959,199	$	141,678,476	$	59,280,723
Power Supply Energy Total	PPET		$	200,959,199	$	141,678,476	$	59,280,723
Power Supply Energy Allocator	PPEA	PPET		1.000000		0.70501		0.29499

BIG RIVERS ELECTRIC CORPORATION
Cost of Service Study
Class Allocation
12 Months Ended December 31, 2019
-- OPTION 1 --

Description	Name	Allocation Vector		Total System		Rural Delivery Service RDS		Large Industrial Customer LIC
Operating Expenses								
Production Demand			$	82,529,943	$	63,873,764	$	18,656,179
Production Energy			$	200,959,199	$	141,678,476	$	59,280,723
Transmission Demand			$	46,624,550	$	36,084,909	$	10,539,641
Total			$	330,113,693	$	241,637,149	$	88,476,543
				1.0000		0.7320		0.2680
Rate Base								
Production Demand			$	707,756,495	$	547,765,690	$	159,990,805
Production Energy			$	21,018,336	$	14,818,161	$	6,200,175
Transmission Demand			$	256,315,205	$	198,374,266	$	57,940,939
Total			$	985,090,036	$	760,958,117	$	224,131,919
				1.0000		0.7725		0.2275
Revenue Requirement Calculated at a Rate of Return of	3.26%							
Production Demand			$	105,620,296	$	81,744,462	$	23,875,833
Production Energy			$	201,644,916	$	142,161,914	$	59,483,002
Transmission Demand			$	54,986,760	$	42,556,813	$	12,429,947
Total			$	362,251,972	$	266,463,189	$	95,788,783
		Target:		362,251,972				
		Variance:	$	-				

BIG RIVERS ELECTRIC CORPORATION
Cost of Service Study
Class Allocation
12 Months Ended December 31, 2019
-- OPTION 1 --

Description	Name	Allocation Vector	Total System	Rural Delivery Service RDS	Large Industrial Customer LIC
Revenue Requirements					
Demand					
Total Rev Req			$ 160,607,056	$ 124,301,275	$ 36,305,781
OSS Rev			$ 6,927,131	$ 4,883,705	$ 2,043,426
Electric Rate Rev Req			$ 153,679,925	$ 119,417,570	$ 34,262,354
Cost per Unit				$ 22.7722	$ 19.3591
Energy					
Total Rev Req			$ 201,644,916	$ 142,161,914	$ 59,483,002
OSS Rev			$ 94,862,862	$ 66,879,376	$ 27,983,487
Electric Rate Rev Req			$ 106,782,054	$ 75,282,539	$ 31,499,515
Cost per Unit				0.033295	0.033295
Total					
Total Rev Req			$ 362,251,972	$ 266,463,189	$ 95,788,783
OSS Rev			$ 101,789,993	$ 71,763,080	$ 30,026,913
Electric Rate Rev Req			$ 260,461,979	$ 194,700,109	$ 65,761,870

BIG RIVERS ELECTRIC CORPORATION
Cost of Service Study
Class Allocation
12 Months Ended December 31, 2019
-- OPTION 2 --

Description	Name	Allocation Vector		Total System		Rural Delivery Service RDS		Large Industrial Customer LIC
Plant in Service								
Production & Purchase Power								
Demand	PLPPD	PPDA	$	1,682,887,287	$	1,291,242,550	$	391,644,737
Energy	PLPPE	PPEA		-	$	-	$	-
Total Power Supply	PLPPT		$	1,682,887,287	$	1,291,242,550	$	391,644,737
Transmission								
Demand	PLTD	TA1	$	379,578,713	$	293,773,631	$	85,805,082
Total	PLT		$	2,062,465,999	$	1,585,016,181	$	477,449,818
				1.0000		0.7685		0.2315
Net Utility Plant								
Production & Purchase Power								
Demand	NPPPD	PPDA	$	662,262,862	$	508,139,787	$	154,123,076
Energy	NPPPE	PPEA		-	$	-	$	-
Total Power Supply	NPPPT			662,262,862	$	508,139,787	$	154,123,076
Transmission								
Demand	NPTD	TA1	$	242,822,817	$	187,931,879	$	54,890,938
Total	NPT		$	905,085,680	$	696,071,666	$	209,014,014
				1.0000		0.7691		0.2309

BIG RIVERS ELECTRIC CORPORATION
Cost of Service Study
Class Allocation
12 Months Ended December 31, 2019
-- OPTION 2 --

Description	Name	Allocation Vector		Total System		Rural Delivery Service RDS		Large Industrial Customer LIC
Net Cost Rate Base								
Production & Purchase Power								
Demand	RBPPD	PPDA	$	707,756,495	$	543,046,055	$	164,710,441
Energy	RBPPE	PPEA		21,018,336	$	14,818,161	$	6,200,175
Total Power Supply	RBPPT			728,774,831	$	557,864,216	$	170,910,615
Transmission								
Demand	RBTD	TA1	$	256,315,205	$	198,374,266	$	57,940,939
Total	RBT		$	985,090,036	$	756,238,482	$	228,851,554
				1.0000		0.7677		0.2323
Operation and Maintenance Expenses								
Production & Purchase Power								
Demand	OMPPD	PPDA	$	44,976,500	$	34,509,483	$	10,467,017
Energy	OMPPE	PPEA		200,959,199	$	141,678,476	$	59,280,723
Total Power Supply	OMPPT			245,935,699	$	176,187,959	$	69,747,740
Transmission								
Demand	OMTD	TOMA	$	34,848,208	$	26,970,650	$	7,877,558
Total	OMT		$	280,783,907	$	203,158,609	$	77,625,298
				1.0000		0.7235		0.2765

BIG RIVERS ELECTRIC CORPORATION
Cost of Service Study
Class Allocation
12 Months Ended December 31, 2019
-- OPTION 2 --

Description	Name	Allocation Vector		Total System		Rural Delivery Service RDS		Large Industrial Customer LIC
Depreciation Expenses								
Production & Purchase Power								
Demand	DPPPD	PPDA	$	37,572,592	$	28,828,627	$	8,743,965
Energy	DPPPE	PPEA		-	$	-	$	-
Total Power Supply	DPPPT			37,572,592	$	28,828,627	$	8,743,965
Transmission								
Demand	DPTD	TA1	$	11,783,363	$	9,119,693	$	2,663,670
Total	DPT		$	49,355,956	$	37,948,320	$	11,407,635
				1.0000		0.7689		0.2311
Property Taxes								
Production & Purchase Power								
Demand	PTPPD	PPDA	$	-	$	-	$	-
Energy	PTPPE	PPEA		-	$	-	$	-
Total Power Supply	PTPPT			-	$	-	$	-
Transmission								
Demand	PTTD	TOMA	$	-	$	-	$	-
Total	PTT		$	-	$	-	$	-
				-		-		-

BIG RIVERS ELECTRIC CORPORATION
Cost of Service Study
Class Allocation
12 Months Ended December 31, 2019
-- OPTION 2 --

Description	Name	Allocation Vector		Total System		Rural Delivery Service RDS		Large Industrial Customer LIC
Other Taxes								
Production & Purchase Power								
Demand	OTPPD	PPDA	$	(19,149)	$	(14,693)	$	(4,456)
Energy	OTPPE	PPEA		-	$	-	$	-
Total Power Supply	OTPPT			(19,149)	$	(14,693)	$	(4,456)
Transmission								
Demand	OTTD	TOMA	$	(7,021)	$	(5,434)	$	(1,587)
Total	OTT		$	(26,170)	$	(20,127)	$	(6,044)
				1.0000		0.7691		0.2309
Cost of Service Summary -- Unadjusted Results								
Operating Revenues								
Total Sales of Electric Energy	REVUC	R01	$	260,461,979	$	195,139,886	$	65,322,092
Off System Sales Revenues		E01	$	101,789,993	$	71,763,080	$	30,026,913
Other Electric Revenues		R01	$	16,474,972	$	12,343,161	$	4,131,811
Total Operating Revenues	TOR		$	378,726,944	$	279,246,128	$	99,480,816
				1.0000		0.7373		0.2627
Operating Expenses								
Operation and Maintenance Expenses			$	280,783,907	$	203,158,609	$	77,625,298
Depreciation and Amortization Expenses				49,355,956		37,948,320		11,407,635
Property Taxes		NPT		-		-		-
Other Taxes				(26,170)		(20,127)		(6,044)
Total Operating Expenses	TOE		$	330,113,693	$	241,086,803	$	89,026,890
Utility Operating Margin	TOM		$	48,613,252	$	38,159,325	$	10,453,926
Net Cost Rate Base			$	985,090,036	$	756,238,482	$	228,851,554
Rate of Return				**4.93%**		**5.05%**		**4.57%**
Unitized Rate of Return				**1.000**		**1.022**		**0.926**

BIG RIVERS ELECTRIC CORPORATION
Cost of Service Study
Class Allocation
12 Months Ended December 31, 2019
-- OPTION 2 --

Description	Name	Allocation Vector		Total System		Rural Delivery Service RDS		Large Industrial Customer LIC
Allocation Factors								
Energy Allocation Factors								
Energy Usage by Class	E01	Energy		1.000000		0.705011		0.294989
Demand Allocation Factors								
Total Power Supply	D01	12CP		1.000000		0.773947		0.226053
Station Equipment -- Maximum Class Demand	D02	NCP		1.000000		0.768650		0.231350
Primary Distribution Plant -- Maximum Class Demand	D03	NCP		1.000000		0.768650		0.231350
Winter CP Demands	WCP			4,991,270		3,845,909		1,145,361
Summer CP Demands	SCP			1,784,391		1,398,091		386,300
12 Month Sum of Coincident Demands	12CP			6,775,662		5,244,000		1,531,662
Class Maximum Demands	NCP			537,480		413,134		124,346
Sum of the Individual Customer Demands	SICD			7,398,555		5,628,723		1,769,832
Average & Excess Allocators	A&E			1.000000		0.767278		0.232722
Reserved				1.000000		-		1.000000
Reserved				1.000000		0.500000		0.500000
Other Allocation Factors								
Rev	R01			260,461,979		195,139,886		65,322,092
Energy	E01			3,207,139,532		2,261,069,130		946,070,402
Loss Factor				0.020		0.020		0.020
Energy Including Losses	Energy			3,273,259,371		2,307,684,354		965,575,017
Customers (Monthly Bills)				-		-		-
Average Customers (Bills/12)	CUST			-		-		-
Allocation Factors: Labor Expenses								
Production & Purchase Power								
Demand	LBPPD	PPDA	$	16,231,351	$	12,453,960	$	3,777,391
Energy	LBPPE	PPEA		18,341,163	$	12,930,725	$	5,410,439
Total Power Supply	LBPPT			34,572,514	$	25,384,685	$	9,187,830

BIG RIVERS ELECTRIC CORPORATION
Cost of Service Study
Class Allocation
12 Months Ended December 31, 2019
-- OPTION 2 --

Description	Name	Allocation Vector		Total System		Rural Delivery Service RDS		Large Industrial Customer LIC
Allocation Factors: Labor Expenses (cont.)								
Transmission								
Demand	LBTD	TOMA	$	20,513,059	$	15,876,011	$	4,637,048
Total	LBT		$	55,085,573	$	41,260,696	$	13,824,878
Allocation Factors - Functionalized								
Transmission Residual Demand Allocator	TRDA			6,775,662		5,244,000		1,531,662
Transmission Plant In Service			$	284,109,520				
Customer Specific Assignment								
Transmission Residual		TRDA	$	284,109,520	$	219,885,580	$	64,223,940
Transmission Total	TA1		$	284,109,520	$	219,885,580	$	64,223,940
Transmission Plant Allocator	T01	TA1		-		-		-
Transmission Residual Demand Allocator	TOMDA			6,775,662		5,244,000		1,531,662
Transmission Plant In Service			$	284,109,520				
Customer Specific Assignment			$	-		-		-
Transmission Residual		TOMDA	$	284,109,520	$	219,885,580	$	64,223,940
Transmission Total	TOMA		$	284,109,520	$	219,885,580	$	64,223,940
Transmission O&M Allocator	T02	TOMA		-		-		-
Power Supply Residual Demand Allocator	PPDRA	A&E		1.00000		0.76728		0.23272
Power Supply Demand Costs			$	44,976,500				
Customer Specific Assignment			$	-	$	-	$	-
Power Supply Demand Residual		PPDRA	$	44,976,500.337	$	34,509,483	$	10,467,017
Power Supply Demand Total	PPDT		$	44,976,500	$	34,509,483	$	10,467,017
Power Supply Demand Allocator	PPDA	PPDT		1.000000		0.76728		0.23272
Power Supply Residual Energy Allocator	PPERA			3,207,139,532		2,261,069,130		946,070,402
Power Supply Energy Costs			$	200,959,199				
Customer Specific Assignment			$	-		-		-
Power Supply Energy Residual		PPERA	$	200,959,199	$	141,678,476	$	59,280,723
Power Supply Energy Total	PPET		$	200,959,199	$	141,678,476	$	59,280,723
Power Supply Energy Allocator	PPEA	PPET		1.000000		0.70501		0.29499

BIG RIVERS ELECTRIC CORPORATION
Cost of Service Study
Class Allocation
12 Months Ended December 31, 2019
-- OPTION 2 --

Description	Name	Allocation Vector		Total System		Rural Delivery Service RDS		Large Industrial Customer LIC
Operating Expenses								
Production Demand			$	82,529,943	$	63,323,418	$	19,206,526
Production Energy			$	200,959,199	$	141,678,476	$	59,280,723
Transmission Demand			$	46,624,550	$	36,084,909	$	10,539,641
Total			$	330,113,693	$	241,086,803	$	89,026,890
				1.0000		0.7303		0.2697
Rate Base								
Production Demand			$	707,756,495	$	543,046,055	$	164,710,441
Production Energy			$	21,018,336	$	14,818,161	$	6,200,175
Transmission Demand			$	256,315,205	$	198,374,266	$	57,940,939
Total			$	985,090,036	$	756,238,482	$	228,851,554
				1.0000		0.7677		0.2323
Revenue Requirement Calculated at a Rate of Return of	3.26%							
Production Demand			$	105,620,296	$	81,040,139	$	24,580,157
Production Energy			$	201,644,916	$	142,161,914	$	59,483,002
Transmission Demand			$	54,986,760	$	42,556,813	$	12,429,947
Total			$	362,251,972	$	265,758,866	$	96,493,106
		Target:		362,251,972				
		Variance:	$	-				

BIG RIVERS ELECTRIC CORPORATION
Cost of Service Study
Class Allocation
12 Months Ended December 31, 2019
-- OPTION 2 --

Description	Name	Allocation Vector	Total System	Rural Delivery Service RDS	Large Industrial Customer LIC
Revenue Requirements					
Demand					
Total Rev Req			$ 160,607,056	$ 123,596,952	$ 37,010,104
OSS Rev			$ 6,927,131	$ 4,883,705	$ 2,043,426
Electric Rate Rev Req			$ 153,679,925	$ 118,713,247	$ 34,966,678
Cost per Unit				$ 22.6379	$ 19.7571
Energy					
Total Rev Req			$ 201,644,916	$ 142,161,914	$ 59,483,002
OSS Rev			$ 94,862,862	$ 66,879,376	$ 27,983,487
Electric Rate Rev Req			$ 106,782,054	$ 75,282,539	$ 31,499,515
Cost per Unit				0.033295	0.033295
Total					
Total Rev Req			$ 362,251,972	$ 265,758,866	$ 96,493,106
OSS Rev			$ 101,789,993	$ 71,763,080	$ 30,026,913
Electric Rate Rev Req			$ 260,461,979	$ 193,995,786	$ 66,466,193

BIG RIVERS ELECTRIC CORPORATION

Summary of Billing Determinants and Demand Analysis

Rate Class	Code	kWh	Revenue	12 - Month Individual Customer Demand	Sum of Individual Customer Max Demand	Class Demand During Peak Month	Sum of Coincident Demands	Summer Coincident Demands	Winter Coincident Demands
Rural Delivery Service	RDS	2,261,069,130	$ 195,139,886	5,628,723	518,289	413,134	5,244,000	1,398,091	3,845,909
Large Industrial Customer	LIC	946,070,402	$ 65,322,092	1,769,832	149,947	124,346	1,531,662	386,300	1,145,361
Total		3,207,139,532	$ 260,461,979	7,398,555	668,236	537,480	6,775,662	1,784,391	4,991,270
OSS			$ 101,789,993						
			$ 362,251,972						
		3,207,139,532	$ 362,251,972	< Reported					
		-	(0)	< Variance					
		0.00%	0.00%	< Variance					

BIG RIVERS ELECTRIC CORPORATION
Summary of Billing Determinants and Demand Analysis

Rate Class	Code	Rate Class	kWh	Revenue	% KWH	% Revenue
Rural Delivery Service	RDS	Rural Delivery Service	2,261,069,130	$ 195,139,886	70.50%	74.92%
Large Industrial Customer	LIC	Large Industrial Customer	946,070,402	$ 65,322,092	29.50%	25.08%
Total		Total	3,207,139,532	$ 260,461,979	100.00%	100.00%
OSS						

BIG RIVERS ELECTRIC CORPORATION
Summary of Billing Determinants and Demand Analysis

Rate Schedule	Code	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Rural Delivery Service	**RDS**									
Energy Usage (kWh)		227,247,466	180,776,952	185,586,047	138,637,451	165,787,898	182,787,905	224,021,869	213,405,150	204,350,288
Average Demand		305,440	242,980	249,444	186,341	222,833	245,683	301,105	286,835	274,664
Diversified Load Factor		73.93%	70.72%	66.71%	66.96%	66.84%	65.95%	74.70%	71.45%	68.68%
Non-Coincident Demand		413,134	343,575	373,901	278,302	333,407	372,520	403,107	401,440	399,929
Coincidence Factor		80.00%	80.00%	80.00%	80.00%	80.00%	80.00%	80.00%	80.00%	80.00%
Coincident Demand		488,464	401,550	452,985	323,910	398,017	447,781	469,580	480,730	458,953
Individual Customer Load Factor		58.93%	55.72%	51.71%	51.96%	51.84%	50.95%	59.70%	56.45%	53.68%
Sum of Individual Customer Demands		518,289	436,064	482,354	358,649	429,888	482,190	504,397	508,109	511,687
Large Industrial Customer	**LIC**									
Energy Usage (kWh)		82,488,970	77,071,480	82,699,628	79,612,213	78,801,778	78,905,350	81,134,502	82,165,344	76,408,759
Average Demand		110,872	103,591	111,155	107,006	105,916	106,056	109,052	110,437	102,700
Diversified Load Factor		90.49%	84.08%	91.49%	87.51%	86.68%	86.79%	88.43%	88.81%	84.20%
Non-Coincident Demand		122,521	123,198	121,488	122,276	122,197	122,201	123,315	124,346	121,977
Coincidence Factor		80.00%	80.00%	80.00%	80.00%	80.00%	80.00%	80.00%	80.00%	80.00%
Coincident Demand		123,060	122,304	121,883	172,548	125,213	117,030	134,369	134,902	130,632
Individual Customer Load Factor		75.49%	69.08%	76.49%	72.51%	71.68%	71.79%	73.43%	73.81%	69.20%
Sum of Individual Customer Demands		146,866	149,947	145,311	147,570	147,770	147,735	148,504	149,615	148,419
System Data										
Sales		309,736,436	257,848,432	268,285,675	218,249,664	244,589,676	261,693,255	305,156,371	295,570,494	280,759,047
Metered CP		611,524	523,854	574,869	496,458	523,230	564,811	603,950	615,632	589,585
Calculated CP		611,524	523,854	574,868	496,458	523,230	564,811	603,949	615,632	589,585
Difference		-	1	1	0	0	0	1	0	-
Hours		744	672	744	720	744	720	744	744	720
Load Factor		0.68	0.73	0.63	0.61	0.63	0.64	0.68	0.65	0.66

BIG RIVERS ELECTRIC CORPORATION
Summary of Billing Determinants and Demand Analysis

Rate Schedule	Code	Oct	Nov	Dec	Total	SIC Max Demand	During Peak Month	Sum of Coin Demand	Summer Coin Demand	Winter Coin Demand
Rural Delivery Service	**RDS**				-					
Energy Usage (kWh)		152,544,747	188,024,243	197,899,114	2,261,069,130					
Average Demand		205,033	252,721	265,993	3,039,071					
Diversified Load Factor		58.53%	68.18%	74.01%						
Non-Coincident Demand		350,321	370,694	359,420	4,399,751		413,134			
Coincidence Factor		80.00%	80.00%	80.00%						
Coincident Demand		448,537	452,729	420,764	5,244,000			5,244,000	1,398,091	3,845,909
Individual Customer Load Factor		43.53%	53.18%	59.01%						
Sum of Individual Customer Demands		471,046	475,262	450,789	5,628,723	518,289				
Large Industrial Customer	**LIC**				-					
Energy Usage (kWh)		76,299,938	74,868,963	75,613,477	946,070,402					
Average Demand		102,554	100,630	101,631	1,271,600					
Diversified Load Factor		84.17%	83.81%	85.78%						
Non-Coincident Demand		121,840	120,072	118,479	1,463,910		124,346			
Coincidence Factor		80.00%	80.00%	80.00%						
Coincident Demand		131,483	114,740	103,498	1,531,662			1,531,662	386,300	1,145,361
Individual Customer Load Factor		69.17%	68.81%	70.78%						
Sum of Individual Customer Demands		148,261	146,247	143,587	1,769,832	149,947				
System Data										
Sales		228,844,685	262,893,206	273,512,591	3,207,139,532					
Metered CP		580,021	567,469	524,263	6,775,666					
Calculated CP		580,020	567,469	524,262	6,775,662					
Difference		1	-	1	4					
Hours		744	720	744	8760					
Load Factor		0.53	0.64	0.70	0.65					

Big Rivers Electric Corporation
Average & Excess Method: Allocators

#	Rate Class (1)	Demand NCP KW (2)	Average Demand KW (3)	Excess Demand KW (4)	System Load Factor (5)	Average Demand Component of Alloc Factor (6)	Excess Demand Component of Alloc Factor (7)	Total Alloc Factor (8)
1	RDS	4,399,751	3,039,071	1,360,680	0.6362	0.4485	0.3188	0.7673
2	LIC	1,463,910	1,271,600	192,310	0.6362	0.1877	0.0451	0.2327
3	TOTAL	5,863,661	4,310,671	1,552,990	0.6362	0.6362	0.3638	1.0000

Notes

A Excess Demand = Demand NCP - Average Demand
B System Load Factor = Total Average Demand / Total CP Demand
C Avg Demand Component = Class Avg Demand / Total Avg Demand x System Load Factor
D Excess Demand Component = Class Excess Demand / Total Excess Demand x (1 - System Load Factor)
E Total Allocation Factor = Avg Demand Component + Excess Demand Component
F All calculations performed pursuant to *NARUC Electric Utility Cost Allocation Manual* , pp 49-52.

BIG RIVERS ELECTRIC CORPORATION
Purchased Power

#	Account	Description	End Bal	Alloc	Demand	Energy
1	55511000	PURCHASED POWER-SEPA	8,078,590	E	-	8,078,590
2	55514001	PURCHASED POWER-MISO ENERGY	6,949,843	E	-	6,949,843
3	55514002	PURCHASED POWER-MISO OTHER CHARGES	771,486	D	771,486	-
4	55515001	HMP&L STATION TWO AMORT EXP	90,774	D	90,774	-
5	55515002	HMP&L STATION TWO AMORT EXP-CLEAN AIR	140,815	D	140,815	-
6	55515004	HMP&L STATION TWO OPER SUPERVISON & ENGINEERING	85,621	D	85,621	-
7	55515005	HMP&L STATION TWO FUEL	33,481	E	-	33,481
8	55515006	HMP&L STATION TWO FUEL HANDLING	67,518	D	67,518	-
9	55515007	HMP&L STATION TWO BOTTOM ASH DISPOSAL	(2,910)	D	(2,910)	-
10	55515008	HMP&L STATION TWO FLY ASH DISPOSAL	71,049	D	71,049	-
11	55515009	HMP&L STATION TWO STEAM EXPENSES	100,912	D	100,912	-
12	55515010	HMP&L STATION TWO SO2 REAGENTS	(41,940)	D	(41,940)	-
13	55515011	HMP&L STATION TWO ELECTRIC EXPENSES	60,663	D	60,663	-
14	55515012	HMP&L STATION TWO STEAM POWER EXPENSES	84,987	D	84,987	-
15	55515015	HMP&L STATION TWO MAINT SUPERVISION & ENGINEERING	49,556	E	-	49,556
16	55515016	HMP&L STATION TWO MAINT STRUCTURES	16,667	D	16,667	-
17	55515017	HMP&L STATION TWO MAINT BOILER PLANT	69,640	E	-	69,640
18	55515018	HMP&L STATION TWO MAINT ELECTRIC PLANT	30,983	E	-	30,983
19	55515019	HMP&L STATION TWO MAINTENANCE MISC STEAM PLANT	14,326	D	14,326	-
20	55515020	HMP&L STATION TWO ADMIN & GENERAL SALARIES	79,467	D	79,467	-
21	55515021	HMP&L STATION TWO OFFICE SUPPLIES & EXPENSE	15,270	D	15,270	-
22	55515022	HMP&L STATION TWO OUTSIDE SERVICES EMPLOYED	10,597	D	10,597	-
23	55515024	HMP&L STATION TWO INJURIES & DAMAGES	1,031	D	1,031	-
24	55515027	HMP&L STATION TWO MAINT OF GENERAL PLANT	612	D	612	-
25	55515030	HMP&L STATION TWO OPER SUPERVISION & ENGINEERING-LINES	601	T	601	-
26	55515031	HMP&L STATION TWO OPER SUPERVISION & ENGINEERING-STATIONS	601	T	601	-
27	55515032	HMP&L STATION TWO MAINT SUPERVISION & ENGINEERING-LINES	601	T	601	-
28	55515033	HMP&L STATION TWO MAINT SUPERVISION & ENGINEERING-STATIONS	601	T	601	-
29	55515034	HMP&L STATION TWO ADMINISTRATIVE AND GENERAL SALARIES-GENERATION	22,160	D	22,160	-
30	55515035	HMP&L STATION TWO OFFICE SUPPLIES AND EXPENSES-GENERATION	3,875	D	3,875	-
31	55515036	HMP&L STATION TWO OUTSIDE SERVICES EMPLOYED-GENERATION	-	D	-	-
32	55515038	HMP&L STATION TWO OUTSIDE SVCS-HMPL EXP	15,800	D	15,800	-
33	55515041	HMP&L STATION TWO MISC STEAM PWR-EMISSION FEES	84,351	D	84,351	-
34	55515043	HMP&L STATION TWO STEAM EXP-MATS ENVIRONMENTAL	46	D	46	-
35	55515044	HMP&L STATION TWO MAINTENANCE BOILER PLANT-MATS ENVIRONMENTAL	3,465	D	3,465	-
36	55515046	HMP&L STATION TWO STEAM EXP-CCR ENVIRONMENTAL	2	D	2	-
37	55515201	HMP&L-STEAM EXPENSES CLEAN AIR	16,313	E	-	16,313
38	55515202	HMP&L-MISC STEAM PWR EXP-SCR/NOX	15,421	E	-	15,421
39	55515204	HMP&L-MAINT BOILER PLANT CLEAN AIR	20,213	E	-	20,213
40	55515205	HMP&L-MAINT SCRUBBER/SOLID WASTE	22,728	E	-	22,728
41	55515206	HMP&L-MAINT BOILER PLANT-REAGENT PREP	(134)	E	-	(134)
42	55515207	HMP&L-MAINT BOILER PLANT-WASTE TREATMENT	(1,780)	E	-	(1,780)
43	55517700	PURCHASED [redacted]	16,921,745	E	-	16,921,745
44	55518300	PURCHASED [redacted]	604,425	E	-	604,425
45	55523700	PURCHASED [redacted]	1,487	E	-	1,487
46	55524000	PURCHASED [redacted]	-	D	-	-
47	55524200	PURCHASED [redacted]	132,528	D	132,528	-
48	55524500	PURCHASED [redacted]	270,432	D	270,432	-
49	555	TOTAL	34,914,517		2,102,006	32,812,511
50		SHARE	100%		6%	94%

BIG RIVERS ELECTRIC CORPORATION
Off System Sales

#	Counterparty	Demand $	Energy $	Total $
1	[redacted]	-	3,112	3,112
2	[redacted]	-	323,033	323,033
3	[redacted]	-	766,765	766,765
4	[redacted]	-	885,920	885,920
5	[redacted]	-	2,395,896	2,395,896
6	[redacted]	-	354,000	354,000
7	[redacted]	-	291,000	291,000
8	[redacted]	-	750,000	750,000
9	[redacted]	-	6,000	6,000
10	[redacted]	-	93,000	93,000
11	[redacted]	-	67,351	67,351
12	[redacted]	-	620,452	620,452
13	[redacted]	-	2,476,929	2,476,929
14	[redacted]	-	8,983,200	8,983,200
15	[redacted]	-	1,266,956	1,266,956
16	[redacted]	-	14,077,120	14,077,120
17	[redacted]	-	62,837,444	62,837,444
18	[redacted]	-	11,489,280	11,489,280
19	[redacted]	-	22,198,240	22,198,240
20	[redacted]	-	3,509,212	3,509,212
21	[redacted]	-	777,159	777,159
22	[redacted]	10,360,000	7,701,856	18,061,856
23	Total $	10,360,000	141,873,925	152,233,925
24	Total %	7%	93%	100%

BIG RIVERS ELECTRIC CORPORATION **2019**

Summary of Rates of Return by Class

#	Rate (1)	Code (2)	Rate Revenue (3)	Operating Revenue (4)	Operating Expenses (5)	Margin (6)	Rate Base (7)	ROR (8)	Unitized ROR (9)
	Option 1								
1	Rural Delivery Service	RDS	$ 195,139,886	$ 279,246,128	$ 241,637,149	$ 37,608,979	$ 760,958,117	4.94%	1.002
2	Large Industrial Customer	LIC	$ 65,322,092	$ 99,480,816	$ 88,476,543	$ 11,004,273	$ 224,131,919	4.91%	0.995
3	Total		$ 260,461,979	$ 378,726,944	$ 330,113,693	$ 48,613,252	$ 985,090,036	4.93%	1.000
	Option 2								
4	Rural Delivery Service	RDS	$ 195,139,886	$ 279,246,128	$ 241,086,803	$ 38,159,325	$ 756,238,482	5.05%	1.022
5	Large Industrial Customer	LIC	$ 65,322,092	$ 99,480,816	$ 89,026,890	$ 10,453,926	$ 228,851,554	4.57%	0.926
6	Total		$ 260,461,979	$ 378,726,944	$ 330,113,693	$ 48,613,252	$ 985,090,036	4.93%	1.000

	Rate	Code	Share of Revenue	Share of Energy
	Rural Delivery Service	RDS	74.9%	70.5%
8	Large Industrial Customer	LIC	25.1%	29.5%
9	Total		100.0%	100.0%

Notes

A Rate Revenue is attributable only to sales to members.

B Pro Forma Operating Revenue includes sales to members, off-system sales, and other revenues.

C ROR is rate of return on rate base.

BIG RIVERS ELECTRIC CORPORATION
Summary of Cost-Based Rates

#	Rate	Code	Cost-Based All-In Rates		Current Rates		Cost-Based Rates		Variance from Current	
			Energy $/KWH	**Demand $/KW**	**Energy $/KWH**	**Demand $/KW**	**Energy $/KWH**	**Demand $/KW**	**Energy $/KWH**	**Demand $/KW**
	Option 1									
1	Rural Delivery Service	RDS	0.033295	22.7722	0.045000	13.8050	0.026636	21.7229	(0.018364)	7.9179
2	Large Industrial Customer	LIC	0.033295	19.3591	0.038050	10.7150	0.027317	16.4524	(0.010733)	5.7374
	Option 2									
3	Rural Delivery Service	RDS	0.033295	22.6379	0.045000	13.8050	0.026636	21.7229	(0.018364)	7.9179
4	Large Industrial Customer	LIC	0.033295	19.7571	0.038050	10.7150	0.027317	16.4524	(0.010733)	5.7374

Notes
A Cost-Based All-In Rates result from the COSS, before adjusting for all riders - i.e. full cost-of-service per month.
B Cost-Based Rates are on equivalent basis with Current Rates, exclusive of all riders - i.e. tariff basis per month.
C Billing Demand for RDS is CP demand and for LIC is individual NCP demand.

BIG RIVERS ELECTRIC CORPORATION
Rate Analysis

Option 1

Rate		Billing Determinants		Current Rate Charge		Current Rate Billings	Cost-Based Rate Charge		Cost-Based Rate Billings	Variance Billings
Rural Delivery Point Service										
Demand Charge	CP	5,244,000	kW-Mo	13.805	/kW-Mo	$ 72,393,420	21.723	/kW-Mo	$ 113,915,044	$ 41,521,624
Energy Charge		2,261,069,130	kWh	0.045000	/kWh	$ 101,748,111	0.026636	/kWh	$ 60,226,487	$ (41,521,624)
Total Demand and Energy Charges				0.077017		$ 174,141,531	0.077017		$ 174,141,531	$ -
FAC				0.000883		1,997,440	0.000883		1,997,440	-
ES				0.006547	0.60	14,802,500	0.006547		14,802,500	-
NSNFPPA				0.001857		4,198,334	0.001857		4,198,334	-
MSRM				(0.005243)		(11,855,638)	(0.005243)		(11,855,638)	-
Net Green Power						82			82	-
Total		2,261,069,130	kWh	0.081061		$ 183,284,248	0.081061		$ 183,284,248	$ -
Before MRSM				0.086304		$ 195,139,886	0.086304		$ 195,139,886	-
Increase $							-		$ -	
Large Industrial Customer Delivery Point Service										
Demand Charge	NCP	1,769,832	kW-Mo	10.715	/kW-Mo	$ 18,963,750	16.452	/kW-Mo	$ 29,117,969	$ 10,154,219
Energy Charge		946,070,402	kWh	0.038050	/kWh	$ 35,997,979	0.027317	/kWh	$ 25,843,760	$ (10,154,219)
Total Demand and Energy Charges				0.058095		$ 54,961,729	0.058094755		$ 54,961,729	$ -
FAC				0.000869		821,919	0.000869		821,919	-
ES				0.004867	0.67	4,604,763	0.004867		4,604,763	-
NSNFPPA				0.001850		1,750,516	0.001850		1,750,516	-
MSRM				(0.003818)		(3,611,763)	(0.003818)		(3,611,763)	-
PF PENALTY						68,555			68,555	-
BILLING ADJ						(1,067,536)			(1,067,536)	-
Total		946,070,402	kWh	0.060808		$ 57,528,183	0.060808		$ 57,528,183	$ -
Before MRSM				0.064625		$ 61,139,946	0.064625		$ 61,139,946	-
Increase $							-		$ -	
TOTAL Rural & Large Industrial Services										
Total		3,207,139,532		0.075086		$ 240,812,431	0.075086		$ 240,812,431	$ -
Before MRSM:				0.079909		$ 256,279,833	0.079909		$ 256,279,833	-
[redacted]						$ 4,182,145			$ 4,182,145	-
Total:						$ 260,461,978			$ 260,461,978	-
Reported:						$ 260,461,979				
Variance						$ (1)				
INCREASE							-		$ -	

BIG RIVERS ELECTRIC CORPORATION
Rate Analysis

Option 2

Rate		Billing Determinants		Current Rate: Charge		Current Rate: Billings	Cost-Based Rate: Charge		Cost-Based Rate: Billings	Variance: Billings
Rural Delivery Point Service										
Demand Charge	CP	5,244,000	kW-Mo	13.805	/kW-Mo	$ 72,393,420	21.723	/kW-Mo	$ 113,915,044	$ 41,521,624
Energy Charge		2,261,069,130	kWh	0.045000	/kWh	$ 101,748,111	0.026636	/kWh	$ 60,226,487	$ (41,521,624)
Total Demand and Energy Charges				0.077017		$ 174,141,531	0.077017		$ 174,141,531	$ -
FAC				0.000883		1,997,440	0.000883		1,997,440	-
ES				0.006547	0.60	14,802,500	0.006547		14,802,500	-
NSNFPPA				0.001857		4,198,334	0.001857		4,198,334	-
MSRM				(0.005243)		(11,855,638)	(0.005243)		(11,855,638)	-
Net Green Power						82			82	-
Total		2,261,069,130	kWh	0.081061		$ 183,284,248	0.081061		$ 183,284,248	$ -
Before MRSM				0.086304		$ 195,139,886	0.086304		$ 195,139,886	-
Increase $							-		$ -	
Large Industrial Customer Delivery Point Service										
Demand Charge	NCP	1,769,832	kW-Mo	10.715	/kW-Mo	$ 18,963,750	16.452	/kW-Mo	$ 29,117,969	$ 10,154,219
Energy Charge		946,070,402	kWh	0.038050	/kWh	$ 35,997,979	0.027317	/kWh	$ 25,843,760	$ (10,154,219)
Total Demand and Energy Charges				0.058095		$ 54,961,729	0.058094755		$ 54,961,729	$ -
FAC				0.000869		821,919	0.000869		821,919	-
ES				0.004867	0.67	4,604,763	0.004867		4,604,763	-
NSNFPPA				0.001850		1,750,516	0.001850		1,750,516	-
MSRM				(0.003818)		(3,611,763)	(0.003818)		(3,611,763)	-
PF PENALTY						68,555			68,555	-
BILLING ADJ						(1,067,536)			(1,067,536)	-
Total		946,070,402	kWh	0.060808		$ 57,528,183	0.060808		$ 57,528,183	$ -
Before MRSM				0.064625		$ 61,139,946	0.064625		$ 61,139,946	-
Increase $							-		$ -	
TOTAL Rural & Large Industrial Services										
Total		3,207,139,532		0.075086		$ 240,812,431	0.075086		$ 240,812,431	$ -
Before MRSM:				0.079909		$ 256,279,833	0.079909		$ 256,279,833	-
[redacted]						$ 4,182,145			$ 4,182,145	-
Total:						$ 260,461,978			$ 260,461,978	-
Reported:						$ 260,461,979				
Variance						$ (1)				
INCREASE							-		$ -	