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February 24, 2011

Via Federal Express

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

Re: Big Rivers Electric Corporation's 2010 Integrated Resource Plan
PSC Case No. 2010-00443

Dear Mr. DeRouen:

Enclosed for filing in the above referenced matter are an original and ten copies of Big Rivers Electric Corporation's responses to the Commission Staff's Second Information Request. Ms. Amber M. Roberts sponsored certain of Big Rivers' responses to the Commission Staff's First Information Request and to the Attorney General's Initial Requests for Information. Ms. Roberts is no longer an employee of GDS Associates, Inc. and will no longer be a witness for Big Rivers. Another GDS employee, Mr. Richard F. Spellman, will sponsor the responses for which Ms. Roberts is listed as a witness. I certify that a copy of this letter and the responses have been served on the parties on the attached service list.

Sincerely yours,

TAK

Tyson Kamuf

TAK/ej
Enclosures

cc: Service List

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BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF BIG RIVERS ELECTRIC CORPORATION

CASE NO. 2010-00443

VERIFICATION

I, Lawrence V. Baronowsky, verify, state, and affirm that I prepared, or supervised the preparation of, the data request responses for which I am the respondent and filed with this verification, and that those responses are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Lawrence V. Baronowsky

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Lawrence V. Baronowsky on this the 24th day of February, 2011.

Paula Mitchell
Notary Public, Ky. State at Large
My Commission Expires 1-12-13

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF BIG RIVERS ELECTRIC CORPORATION

CASE NO. 2010-00443

VERIFICATION

I, Roger D. Hickman, verify, state, and affirm that I prepared, or supervised the preparation of, the data request responses for which I am the respondent and filed with this verification, and that those responses are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Roger D. Hickman

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Roger D. Hickman on this the 24th day of February, 2011.

Paula Mitchell
Notary Public, Ky. State at Large
My Commission Expires 1-12-13

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF BIG RIVERS ELECTRIC CORPORATION

CASE NO. 2010-00443

VERIFICATION

I, John W. Hutts, verify, state, and affirm that I prepared, or supervised the preparation of, the data request responses for which I am the respondent and filed with this verification, and that those responses are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

John W. Hutts

STATE OF GEORGIA)
COUNTY OF COBB)

SUBSCRIBED AND SWORN TO before me by John W. Hutts on this the 23rd day of February, 2011.

Notary Public, Ga. State at Large
My Commission Expires 2.17.2014

FAYE H CULPEPPER NOTARY PUBLIC COBB COUNTY GEORGIA EXPIRES FEB. 17, 2014

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION

CASE NO. 2010-00443

VERIFICATION

I, Michael J. Mattox, verify, state, and affirm that I prepared, or supervised the preparation of, the data request responses for which I am the respondent and filed with this verification, and that those responses are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Michael J. Mattox

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Michael J. Mattox on this the 24th day of February, 2011.

Paula Mitchell
Notary Public, Ky. State at Large
My Commission Expires 1-12-13

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF BIG RIVERS ELECTRIC CORPORATION

CASE NO. 2010-00443

VERIFICATION

I, Thomas L. Shaw, verify, state, and affirm that I prepared, or supervised the preparation of, the data request responses for which I am the respondent and filed with this verification, and that those responses are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Thomas L. Shaw

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Thomas L. Shaw on this the 24th day of February, 2011.

Paula Mitchell
Notary Public, Ky. State at Large
My Commission Expires 1-12-13

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF BIG RIVERS ELECTRIC CORPORATION

CASE NO. 2010-00443

VERIFICATION

I, Brian D. Smith, verify, state, and affirm that I prepared, or supervised the preparation of, the data request responses for which I am the respondent and filed with this verification, and that those responses are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Brian D. Smith

STATE OF GEORGIA)
COUNTY OF COBB)

SUBSCRIBED AND SWORN TO before me by Brian D. Smith on this the 23rd day of February, 2011.

FAYE H CULPEPPER NOTARY PUBLIC COBB COUNTY GEORGIA EXPIRES FEB. 17, 2014

Notary Public, GA State at Large
My Commission Expires 2/17/2014

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION

CASE NO. 2010-00443

VERIFICATION

I, Richard F. Spellman, verify, state, and affirm that I prepared, or supervised the preparation of, the data request responses for which I am the respondent and filed with this verification, and that those responses are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Richard F. Spellman

STATE OF GEORGIA)
COUNTY OF COBB)

SUBSCRIBED AND SWORN TO before me by Richard F. Spellman on this the 10TH day of February, 2011.

Notary Public, State of Georgia
My Commission Expires February 10, 2015

K RUDITYS
MY COMMISSION EXPIRES
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2015
COBB CO., GEORGIA
NOTARY PUBLIC

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF BIG RIVERS ELECTRIC CORPORATION

CASE NO. 2010-00443

VERIFICATION

I, Glen D. Thweatt, verify, state, and affirm that I prepared, or supervised the preparation of, the data request responses for which I am the respondent and filed with this verification, and that those responses are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Glen D. Thweatt

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Glen D. Thweatt on this the 24th day of February, 2011.

Paula Mitchell
Notary Public, Ky. State at Large
My Commission Expires 1-12-13

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF BIG RIVERS ELECTRIC CORPORATION

CASE NO. 2010-00443

VERIFICATION

I, Jacob M. Thomas, verify, state, and affirm that I prepared, or supervised the preparation of, the data request responses for which I am the respondent and filed with this verification, and that those responses are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Jacob M. Thomas

STATE OF GEORGIA)
COUNTY OF COBB)

SUBSCRIBED AND SWORN TO before me by Jacob M. Thomas on this the 23 day of February, 2011.

FAYE H. CULPEPPER NOTARY PUBLIC EXPIRES GEORGIA FEB. 17, 2014 COBB COUNTY

Notary Public, Ga. State at Large
My Commission Expires 2/17/2014

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF BIG RIVERS ELECTRIC CORPORATION

CASE NO. 2010-00443

VERIFICATION

I, Russell L. Pogue, verify, state, and affirm that I prepared, or supervised the preparation of, the data request responses for which I am the respondent and filed with this verification, and that those responses are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Russell L. Pogue

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Russell L. Pogue on this the 24th day of February, 2011.

Paula Mitchell
Notary Public, Ky. State at Large
My Commission Expires 1-12-13

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2010-00443

Response to Commission Staff's Second Information Request
dated February 11, 2011

February 25, 2011

Item 1) ***807 KAR 5058, Section 8, Resource Assessment and Acquisition Plan, requires a utility to discuss improvements to and more efficient utilization of existing utility generation, transmission, and distribution facilities. In addition, in its Unwind Transaction testimony, Big Rivers stated that as the owner, it would be able to operate its generation more effectively and improve the efficiency of its generating units.***

a. Describe in detail the actions Big Rivers has undertaken to operate its generation more efficiently since the completion of the Unwind Transaction.

b. Describe in detail any actions or plans to operate its generation more efficiently during the 15 year period covered by the Integrated Resource Plan ("IRP").

c. Describe in detail any actions or plans to improve the efficiency of each generating unit during the 15 year period covered by the IRP.

d. To the extent not covered in the response to part a. of this request, describe Big Rivers' efforts since the completion of the Unwind Transaction, and the results of those efforts, to improve the availability of its generating units.

e. To the extent not covered in the response to part b. of this request, describe Big Rivers' planned efforts over the 15 years of the IRP, and the results expected therefrom, to improve the availability of its generating units.

Response)

a. Big Rivers' mission is to safely deliver low cost, reliable wholesale power and the cost effective shared services desired by its members (Jackson Purchase Energy Corporation ("JPEC"), Kenergy Corp.

("Kenergy"), and Meade County Rural Electric Cooperative Corporation ("Meade County RECC"), also collectively called the "Members"). Toward that goal, Big Rivers focuses on unit efficiency and reliability. Each year, Big Rivers publishes its rolling four-year production work plan, which includes unit- and plant-specific operation and maintenance strategies that are vital to keeping the generating facilities operating at peak performance at the lowest reasonable cost. The production work plan also includes Key Performance Indicators ("KPIs") consisting of Equivalent Forced Outage Rate, Equivalent Availability Factor, Unit Heat Rate, Variance From Planned Outage Duration, and Production Controllable Cost (O&M labor, O&M non-labor, and Capital) to measure Big Rivers' progress toward these goals. All performance KPIs are calculated using IEEE Standards which are ANSI-approved to use in reporting electric generating unit reliability, availability and productivity. Since the closing of the Unwind Transaction in July 2009, Big Rivers has created a new position (Manager of Production Services), who's primary responsibility is to develop a standardized performance improvement plan to monitor and improve the heat rate on all of its generating units. Big Rivers has also committed to utilizing Black & Veatch to measure plant performance before and after each planned unit outage to ensure Big Rivers is getting the expected improvements. Big Rivers also has a contract with Black & Veatch to continuously monitor performance on the Henderson Municipal Power & Light ("HMP&L") units.

b. Big Rivers is in the process of developing continuous plant performance monitoring programs by using data that is transmitted

from plant equipment into its distributed control system, performing the necessary calculations, and displaying the results on dedicated monitors in each unit's control room to assist plant operators in managing controllable losses in real time.

c. As explained in more detail in the response to part e below, Big Rivers expects to increase scheduled outages and maintenance activities over current levels, which should benefit unit efficiency. More specifically, within the 15-year period covered by the 2010 IRP, Big Rivers will overhaul all of its turbine fleet in order to maintain turbine cycle efficiency. Additionally, Big Rivers has committed to replacing many worn out and inefficient capital assets within the 15-year period in order to maintain its plants efficiency.

d. A commonly used industry standard for measuring the reliability of coal-fired generating units is the weighted average Equivalent Forced Outage Rate ("EFOR"). Big Rivers determines EFOR for its generation system using the North American Electric Reliability Council's ("NERC") Generating Availability Data System ("GADS"), and can compare its EFOR to that of other utilities. Big Rivers can also use Equivalent Availability Factor ("EAF"), and Net Capacity Factor ("NCF") for making comparisons to other utilities in the industry. Big Rivers uses Navigant Consulting's "Generation Knowledge Service" to compare its plant reliability to similar units across the region. In a benchmarking study completed in January 2011, for the period beginning January 2007 through September 2010, the performance statistics for Big Rivers' units were better than the median for the 99 units in the peer group. For the comparative period,

the performance metrics for Big Rivers' units compared to the peer group median are as follows:

Generating Units Performance Statistic
January 2007 through September 2010

Big Rivers Units			Peer Group Median	
EFOR	4.37%	(lower is better)	EFOR	6.47%
EAF	89.02%	(higher is better)	EAF	86.65%
NCF	81.05%	(higher is better)	NCF	70.57%

The performance statistics for Big Rivers' units for the period from the closing of the Unwind Transaction through the end of 2009 and for 2010 are:

Big Rivers Generating Units Performance Statistic

July-December 2009		Full Year 2010	
EFOR	3.71%	EFOR	3.58%
EAF	85.90%	EAF	93.65%
NCF	73.74%	NCF	84.02%

e. Outage planning is an important part of Big Rivers' reliability strategy. Maintenance Planners at each station utilize Big Rivers' outage planning process manual to ensure optimum results from unit down time. Big Rivers generally performs scheduled outages as identified below:

i. Coleman units 1, 2, and 3

(1) Flue Gas Desulfurization ("FGD") outages – 2 year interval

(2) Boiler and turbine valve outages – 3 year interval

(3) Turbine generator major inspections – 9 year interval

ii. HMP&L units 1 and 2

(1) Boiler/FGD outages – 2 year interval

(2) Turbine valve outages – 4 year interval

(3) Turbine generator major inspections – 8 year interval

iii. Wilson, Green units 1 and 2

(1) Boiler/FGD outages – 2 year interval

(2) Turbine valve outages – 2 year interval

(3) Turbine generator major inspections – 8 year interval

Due to the depressed economy during 2009 and 2010, load demand in the Big Rivers system was down, off-system sales volumes were low, and market prices were down. Big Rivers deferred some maintenance activities in 2010 and 2011 in order to reduce expenses so that Big Rivers could meet its loan covenants. If Big Rivers receives the rate increase it is seeking in a separate proceeding, by the end of 2012, Big Rivers expects to have all of its deferred maintenance completed, and intends to follow this planned outage maintenance schedule throughout the remaining years covered by the 2010 IRP. However, if Big Rivers does not receive that rate relief, it will have no option but to continue to defer scheduled outages and to reduce plant maintenance, which will have a negative impact on generator reliability. Following this planned maintenance outage schedule, Big Rivers expects to achieve performance metrics that are as good as, or better than, those it has achieved since the closing of the Unwind Transaction.

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2010-00443

Response to Commission Staff's Second Information Request
dated February 11, 2011

February 25, 2011

Respondent) Lawrence V. Baronowsky

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2010-00443

Response to Commission Staff's Second Information Request
dated February 11, 2011

February 25, 2011

Item 2) ***To the extent that Big Rivers has any distribution facilities, discuss any efforts to improve the efficient utilization of such facilities as directed by 807 KAR:058, Section 8(2)a.***

Response) Big Rivers is a generation and transmission cooperative which is owned by its Members, and has no distribution facilities.

Respondent) Glen D. Thweatt

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2010-00443

Response to Commission Staff's Second Information Request
dated February 11, 2011

February 25, 2011

Item 3) ***Refer to Big Rivers' 2010 IRP, Executive Summary at ii, which indicates that the 14 percent reserve margin criteria Big Rivers has used in its resource assessment analysis is based on the North American Electric Reliability Council's ("NERC") suggested 15 percent reserve margin target.***

a. Explain in detail the basis for using the NERC 15 percent reserve margin and whether the NERC target was based on a specific study of Big Rivers' planning needs. If not based on a Big Rivers-specific study, identify the other factors upon which the NERC target was based.

b. Explain in detail the basis for using a 14 percent reserve margin and whether it was based on a specific study of Big Rivers' planning needs. If not based on a Big Rivers-specific study, identify the other factors upon which the 14 percent reserve margin was based.

Response)

a. Big River's 2010 IRP states, on Page 5-4, that one of the Planning Objectives is to "[m]eet North American Electric Reliability Corporation ('NERC') guidelines and requirements." In NERC's "2009 Long-Term Reliability Assessment," a 15% reserve margin for thermal-based systems was used unless a reliability region (SERC Reliability Corporation ("SERC") for Big Rivers) or regulatory requirements specified a different margin level. Since neither SERC nor Kentucky require a specific target, Big Rivers thought it prudent to use the NERC suggested value for thermal-based systems, which is applicable to Big Rivers, as a basis for the 14 percent reserve margin. The NERC target was not based on a study specific to Big Rivers. For additional information, please see the following link:

www.nerc.com/files/2009_LTRA.pdf. Big Rivers is providing an electronic copy of NERC's 2009 Long-Term Reliability Assessment on the CD accompanying these responses.

b. Big Rivers used a minimum reserve margin of 14% in the modeling process to recognize the fact that some fluctuation around the target of 15% is acceptable. A low-side bandwidth of 1% allows the reserve margin to drop below 15% for limited amounts of time, deferring additions that could result in reserve margins well in excess of 15% in future periods.

The selection of the 15% reserve margin target and the 14% modeling minimum were not based on a study specific to Big Rivers.

Respondent) Michael J. Mattox

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2010-00443

Response to Commission Staff's Second Information Request
dated February 11, 2011

February 25, 2011

Item 4) ***Refer to Big Rivers' 2010 IRP, Executive Summary at iv. Big Rivers indicates that the 4.5 percent reserve margin ("MISO Reserve Margin") used in the "MISO Case" is the Midwest Independent System Transmission Operator's ("MISO") Non-Coincident load Based Planning Reserve margin. Explain in detail the basis for the 4.5 percent MISO Reserve Margin and whether the 4.5 percent reserve margin was based on a specific study of Big Rivers' planning needs. If not based on a Big Rivers specific study, identify the other factors upon which the 4.5 percent MISO Reserve Margin was based.***

Response) Big Rivers obtained the 4.5 percent margin from the Midwest ISO Business Practices Manual ("BPM") Resource Adequacy, BPM-011-r6, effective June 1, 2010, at the following link: https://www.midwestiso.org/Library/BusinessPracticesManuals/Pages/BusinessPracticesManuals.aspx. Section 3 of this document discusses how the Midwest ISO calculates the Non-Coincident Load Based margin. The basis for the information contained in the BPM is the Midwest ISO document, "Planning Year 2010 LOLE Study Report", dated February 2010 at the following link: https://www.midwestiso.org/Library/Repository/Meeting%20Material/Stakeholder/LOLEWG/2010/2010%20LOLE%20Report.pdf. Both of these documents are also being provided on the CD accompanying these responses.

The reserve requirements in these documents are not specific to Big Rivers, but rather set forth responsibilities to which all load-serving entities in the Midwest ISO must adhere. The only exception to this is under Section 3.6 of the BPM, which indicates that state utility commissions may establish planning reserve margins for utilities under their jurisdiction.

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2010-00443

Response to Commission Staff's Second Information Request
dated February 11, 2011

February 25, 2011

Respondent) Michael J. Mattox

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2010-00443

Response to Commission Staff's Second Information Request
dated February 11, 2011

February 25, 2011

Item 5) ***If none of the reserve margins cited in the responses to the two previous requests are based on a specific study of its planning needs, explain why Big Rivers believes it is appropriate to use the 14 percent reserve margin and the 4.5 percent MISO Reserve Margin for planning purposes.***

a. Explain whether Big Rivers has performed a specific study of its reserve margin criteria within the past 10 years.

b. Explain whether Big Rivers intends to perform a specific study of its reserve margin criteria for its next integrated resource plan.

Response) Please see Big Rivers' responses to Items 3 and 4 of the Commission Staff's Second Information Request dated February 11, 2011 ("Staff's 2nd Data Request").

a. Big Rivers has not performed a specific study in the past 10 years.

b. Due to Big Rivers integration into the Midwest ISO, which specifies reserve margin requirements for load-serving entities, Big Rivers does not intend to perform a specific study prior to its next IRP. Big Rivers intends to comply with the Midwest ISO resource adequacy requirements. A benefit of membership in the Midwest ISO is that Big Rivers is able to take advantage of efficiencies that result from the collective membership. If a Big Rivers specific or regulatory mandated planning reserve margin in excess of that required by the Midwest ISO was implemented, it would put Big Rivers at an economic disadvantage relative to other Midwest ISO members. This would result in increased costs to Big Rivers since cost savings made possible by its Midwest ISO membership would be forgone.

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2010-00443

Response to Commission Staff's Second Information Request
dated February 11, 2011

February 25, 2011

Respondent) Michael J. Mattox

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2010-00443

Response to Commission Staff's Second Information Request
dated February 11, 2011

February 25, 2011

Item 6) ***Describe the planning reserve margin requirements with which Big Rivers must comply as a MISO member***

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a. ***Describe the impact such requirements will have on Big Rivers' future IRPs.***
b. ***Explain whether Big Rivers anticipates any increase in generation efficiency as a result of MISO's economic generation dispatch. If yes, state the annual increase in efficiency anticipated over the 15 year period covered by the IRP.***

Response) Planning reserve margin requirements with which Big Rivers must comply as a Midwest ISO member are contained in Midwest ISO BPM Resource Adequacy, BPM-011, at the following link: https://www.midwestiso.org/Library/BusinessPracticesManuals/Pages/BusinessPracticesManuals.aspx, and in the Midwest ISO Tariff Module E at the following link: https://www.midwestiso.org/Library/Tariff/Pages/Tariff.aspx. An electronic copy of both documents is provided on the CD accompanying these responses. The former was provided in Big Rivers' response to Item 4 of the Staff's 2nd Data Request.

a. Big Rivers anticipates future IRPs will utilize Midwest ISO resource adequacy requirements as a base case. In general, as shown in Table 8.1, page 8-3, of the 2010 IRP, it is anticipated that under the Midwest ISO, Big Rivers will be able to defer the need for new generation relative to the current base case.
b. For the purpose of this response, increased generation efficiency is assumed to mean unit heat rate improvement. As is commonly known, the heat rate of most thermal generating units improves as the load is

increased. Therefore, if the units can be operated at higher loads consistently, the units' heat rate will be improved. Big Rivers has only been in the Midwest ISO since December, 2010 and is still uncertain how its units will be dispatched by the Midwest ISO in the longer term. During the first two months in the Midwest ISO, Big Rivers has seen little change in how the Midwest ISO is dispatching the units compared to how the units have been dispatched historically. Generation is being reduced when the Midwest ISO market price is weak. Also, in the Midwest ISO, the Green units and Coleman units have been called on frequently for system regulation meaning unit output is swinging up and down regularly. The swinging load has a negative impact on heat rate.

How Big Rivers' generation efficiency will be affected by the Midwest ISO's economic generation dispatch over the next fifteen years is currently not known due to the uncertainty of how the Midwest ISO will dispatch Big Rivers' units.

Respondents)

a. Michael J. Mattox

b. Lawrence V. Baronowsky

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2010-00443

Response to Commission Staff's Second Information Request
dated February 11, 2011

February 25, 2011

Item 7) ***Refer to Big Rivers' 2010 IRP, Executive Summary at iii. The first bulleted paragraph states "The DSM analysis conducted as part of the 2010 IRP evaluation includes screening of demand response ("DR") programs. The DR programs analyzed were not cost effective in the DSM screening analysis. Big Rivers will continue to monitor the cost effectiveness of DR programs." On page 58 of the GDS Associates, Inc.'s report ("GDS Report"), there is a listing of Total Resource Cost ("TRC") Test evaluations. The TRCs of 15 programs are shown, some of which are greater than 1.0. Explain whether Big Rivers has considered bundling any of these programs so that programs could be grouped together with bundled TRCs being greater than 1.0, and whether there would be adequate participation for these programs.***

Response) At this time Big Rivers has not considered bundling individual Demand Response ("DR") measures for further evaluation. The evaluated DR programs with TRC test values in the range of 1 or slightly higher were not deemed appropriate, at this time, for wide scale program development, but may be applicable if individual project benefits and costs are conducive.

Individual projects, such as the 50 MW Heat and Power cogeneration project at the Domtar Paper Company LLC facility in Hawesville, Kentucky, are considered when opportunities are identified. These projects are generally site and resource specific.

Respondent) Russell L. Pogue

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2010-00443

Response to Commission Staff's Second Information Request
dated February 11, 2011

February 25, 2011

Item 8) ***Describe the consideration given by Big Rivers to cogeneration in its resource analysis.***

Response) The resource analysis included potential sources of generation that were modeled using generic characteristics, such as capital requirements, fuel requirements, non-fuel operating costs, and availability. To the extent that cogenerators could provide power at costs equivalent to those associated with power self-supplied by Big Rivers or power purchased from other sources, Big Rivers would be open to discussions with owners of potential cogeneration projects.

Respondents) Michael J. Mattox and Brian D. Smith

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2010-00443

Response to Commission Staff's Second Information Request
dated February 11, 2011

February 25, 2011

Item 9) ***Provide the number of net metering customers and the amount of energy they provide on the system of each of Big Rivers' three member-owners.***

Response) Currently, JPEC and Kenergy have no net metered accounts. Meade County RECC has two net metered accounts, both for less than a year, which have sold back a total of 24 kWh.

Respondent) Russell L. Pogue

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF BIG RIVERS ELECTRIC CORPORATION CASE NO. 2010-00443

Response to Commission Staff's Second Information Request dated February 11, 2011

February 25, 2011

Item 10) ***Refer to section 5 on page 5-12 of Big Rivers IRP. Provide a schedule of the timeframes for the evaluation of existing and planned demand side management ("DSM") programs.***

Response) With the exception of continuing education efforts by Big Rivers' Members, the only current DSM program is the CFL distribution, which is ongoing. Several pilot projects are ongoing or planned for the near future which, if proven cost effective at the local level, will be converted to permanent programs. The following is the schedule for the pilot projects.

1. Residential weatherization	Through May 2011
2. Commercial Lighting	Through June 2011
3. High efficiency security lighting	Through June 2011
4. Energy Star new home construction	Through September 2011
5. Energy Star refrigerator replacement	Through February 2011
6. Energy Star clothes washer	April – May 2011
7. Energy Star HVAC tune-up	April – May 2011
8. Manufactured home weatherization	March – June 2011
9. Poultry Energy Efficiency Pilot	April – October 2011

Each of the Members has committed to offering the following energy efficiency programs in 2011 as they prove cost effective at a local level.

1. Residential lighting
2. Residential products
3. Residential advanced technologies
4. Residential weatherization

5. Residential new construction
6. Commercial lighting
7. Commercial HVAC

Please see Big Rivers' response to Item 3 of the Commission Staff's Initial Request for Information dated January 12, 2011.

Respondent) Russell L. Pogue

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2010-00443

Response to Commission Staff's Second Information Request
dated February 11, 2011

February 25, 2011

Item 11) ***Refer to the narrative discussion about the more efficient utilization of transmission facilities on page 6-3 of the IRP.***

a. Explain whether Big Rivers foresees exporting more power than it imports.

b. Identify and describe the factors Big Rivers considers when evaluating the option of purchasing power versus adding generation capacity.

c. Identify and describe any restrictions on the amount of power that can be imported or exported on the 13 mile 161kV line from the Wilson switchyard to the tap point on the Hardinsburg to Paradise 161 kV interconnection.

d. Identify and describe any restrictions on the quantity of power that can be imported or exported through the recently constructed Daviess County EHV substation.

Response)

a. Based on Big Rivers' generation resources relative to its load obligations, exports out of the Big Rivers Local Balancing Authority ("LBA") within the Midwest ISO are expected to exceed imports.

b. In the context of the 15-year time horizon of the 2010 IRP, the resource analysis included potential sources of generation that were modeled using generic characteristics, such as capital requirements, fuel requirements, non-fuel operating costs, and availability. As described on page 8-8 of the 2010 IRP, when new capacity was projected to be needed, potential sources of that capacity included self-

build or unit participation by Big Rivers, or purchases of capacity from appropriate resources owned by others.

c. The 13 mile 161 kV line from the Wilson switchyard to the tap point on the Hardinsburg to Paradise 161 kV interconnection will be part of a modification to and upgrade of this existing Big Rivers to TVA connection. When complete, the contract path limitation will be 446 MVA. This contract path limitation will apply to both power import and export. With the anticipated completion of this project in 2011 and the completion of all other "Phase Two" projects, an increase of 468 MW in export Available Transfer Capability ("ATC") on the Big Rivers system will be achieved (see case No. 2007-00177 The Application of Big Rivers Electric Corporation for a Certificate of Public Convenience and Necessity to Construct a 161 kV Transmission Line in Ohio County, Kentucky). Phase Two alleviates internal constraints to Big Rivers' export transfer capability, assuming the loss of both large aluminum smelter plant loads from the Big Rivers system. Big Rivers' export transfer capability, once "Phase Two" is complete, will be 1380 MW.

d. The Daviess County EHV substation construction resulted in the creation of two new Big Rivers to Kentucky Utilities interconnections. The new Daviess County EHV to Coleman EHV 345 kV interconnection is rated at 717 MVA. The new Daviess County EHV to Wilson EHV 345 kV interconnection is rated at 956 MVA. These contract path limitations apply to both power import and export. The completion of this project in 2008 provided an increase of some 450 MW in export ATC on the Big Rivers system.

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Respondents)

a. Michael J. Mattox

b. Michael J. Mattox

c. Glen D. Thweatt

d. Glen D. Thweatt

BIG RIVERS ELECTRIC CORPORATION

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Item 12) ***Refer to the Section titled Transmission System on pages 6-3 and 6-4 of the IRP regarding more efficient utilization of transmission facilities. The narrative discussion addresses several actions taken from 2005 through August 2010, but does not address any actions planned during the 15 year period covered by the IRP. Table 6-2 identifies several planned transmission system additions.***

a. Describe any transmission constraints that may limit Big Rivers ability to import or export power.

b. Provide a discussion of the manner in which the additions listed in Table 6-2 will improve the efficiency of the transmission system.

c. Identify and describe any other actions, beyond system additions, Big Rivers plans to undertake with respect to its transmission system during the 15 year period covered by the IRP.

Response)

a. The Big Rivers transmission system additions identified in Table 6-2 include the "Phase 2" projects discussed in Big Rivers' response to Item 11c in the Staff's 2nd Data Request, and alleviate internal constraints to Big Rivers' export transfer capability assuming the loss of both large aluminum smelter plant loads from Big Rivers' system. Big Rivers expects that any other transmission constraint can be effectively managed through the Midwest ISO market processes.

b. The additions listed in Table 6-2 are necessary to allow Big Rivers to continue to serve its load in a reliable manner according to its planning criteria. The list includes seven re-conductor projects which result in increases in the capacity of existing Big Rivers transmission line facilities. The list includes six transformer additions and one line

terminal addition at existing 161-69 kV substations on Big Rivers' system. Big Rivers is thus meeting the increased power needs of its Members using existing system facilities as much as possible. The remaining system addition projects represent the least cost solutions to provide the required service to its Members under both normal and contingency operating conditions.

c. Big Rivers has and will continue to consider the re-tensioning of existing line conductors as a means to upgrade line ratings to meet increased power needs and to consider system reconfiguration through switching as alternatives to system additions wherever feasible or cost-effective.

Respondent) Glen D. Thweatt

BIG RIVERS ELECTRIC CORPORATION

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Item 13) ***Refer to Table 8.5 on page 8-9 of the IRP.***

a. When is the Southeastern Power Administration ("SEPA") capacity provided from the Cumberland System expected to be in a firm dependable status?

b. Describe the impacts the recently announced extension of time to complete the dam repair on the Cumberland System will likely have on the timeframe for when this supply source will be in a firm dependable status.

c. Provide the impact this delay will have on the assumptions and conclusions in the IRP.

Response)

a. Big Rivers expects firm capacity from SEPA to be available sometime in 2013.

b. Any delay in repairs will impact SEPA's ability to end the force majeure and allow scheduling of power on a firm basis.

c. The delay will have no impact on the assumptions or conclusions in Big Rivers' 2010 IRP. Big Rivers conservatively assumed, due to uncertainty around the repairs, it could not schedule its full allocation of 178 MW until 2014.

Respondent) Michael J. Mattox

BIG RIVERS ELECTRIC CORPORATION

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Item 14) ***Refer to Table 8.16 on page 8-18 of the IRP and page 7 of Appendix B, Demand Side Management: Big Rivers Final Potential Study. Explain why there are no avoided transmission or distribution costs.***

Response) Big River's current transmission capacity is well in excess of its peak demand requirements. Therefore, a reduction in peak demand currently has very little to no value in terms of deferring construction of transmission facilities.

It is very difficult to estimate avoided distribution costs related to reductions in peak demand. The distribution system is primarily designed to meet the Members' system peak and non-coincident peak demand constraints and not G&T-level coincident peak demands. Therefore, reductions in the Big River's peak demand may delay construction of a substation several months, but that value is negligible and would have little impact on the results of the DSM potential study.

Respondent) Jacob M. Thomas

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Item 15) ***Refer to Table 4.1 and 4.2 on page 18 of Appendix B, Demand Side Management: Big Rivers Final Potential Study. Explain why the current load forecast does not predict growth in the large commercial/industrial sector, either in customers or the forecasted sales.***

Response) The large commercial/industrial sector includes all customers with annual peak demand exceeding 1 MW. In the base year of the 2009 Load Forecast, 2008, there were 20 customers. Since 1996, the number of customers in the class has fluctuated between 17 and 23. At the time the load forecast was prepared, Big Rivers and its Members had received no requests for service from potential customers with expected peak demand in excess of 1 MW. Furthermore, Big Rivers and its Members had received no indications from existing large commercial customers of future plant expansions or increases in operations. It has been Big Rivers' practice, due in large part to oversight and review from the Rural Utilities Services, not to include any new load and energy growth in the large commercial class unless Big Rivers and its Members have some type of commitment (request for service, contract, *etc.*) from potential customers.

Respondent) John W. Hutts

BIG RIVERS ELECTRIC CORPORATION

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Item 16) ***Refer to Appendix B, the "Demand-Side Management (DSM) Potential Report for Big Rivers Electric Corporation," page 57 of the GDS Report. The first paragraph under the heading 8.5 Demand Response Programs Evaluated states "Programs not included initially, but that could have been considered if further analysis was warranted include, but are not limited to: dual fuel heat pumps, electric thermal storage ("ETS") heating units for residences, ETS cooling units for commercial buildings, direct control of swimming pools pumps, and direct control of agricultural applications such as irrigators and grain dryers." Explain whether Big Rivers is aware of the approximate number of customers or participants that may currently exist for each of these potential demand response programs and how it might market these programs to potential participants.***

Response) Big Rivers has not conducted research to provide expectations regarding participation in, or marketing of, the programs listed. Therefore, Big Rivers is not aware of the approximate number of customers or participants that may currently exist for each of these potential Demand Response programs.

Respondent) Jacob M. Thomas

BIG RIVERS ELECTRIC CORPORATION

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Item 17) ***Refer to tables Electric Measure Assumptions (Initial Assumptions & Levelized Costs) in Appendix 2 (Residential Measure Descriptions, Assumptions and Sources) and Commercial and Industrial Measure Assumptions and B/C Test Results in Appendix 3 of Appendix B, Demand Side Management: Big Rivers Final Potential Study. Provide electronic copies of the tables in an Excel spreadsheet with all formulas intact. For columns that have numbers resulting from a computation, if the formula for the computation is not in the spreadsheet, provide a written explanation as to how the computation was derived.***

Response) Please see the files provided on the CD accompanying these responses for the requested Excel spreadsheets.

Respondent) Richard F. Spellman

BIG RIVERS ELECTRIC CORPORATION

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Item 18) ***Provide the dispatch order of the Big Rivers' generating units.***

Response) Under its membership in the Midwest ISO, Big Rivers does not determine the dispatch order of its generating units. In the day-ahead market, the Midwest ISO via Security Constrained Unit Dispatch ("SCUD"), Security Constrained Unit Commitment ("SCUC"), and Simultaneous Feasibility Test ("SFT") algorithms simultaneously co-optimizes dispatch of energy and operating reserves for all units in the Midwest ISO while ensuring system reliability. For the real-time market, the Midwest ISO uses Security Constrained Economic Dispatch ("SCED") to dispatch units.

Respondent) Michael J. Mattox

BIG RIVERS ELECTRIC CORPORATION

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Item 19) ***Provide contract termination dates and any contract extension provisions of the generation available from Henderson Municipal Power and Light and the Southeastern Power Administration.***

Response) On July 15, 1998, the City of Henderson, Kentucky, the City of Henderson Utility Commission, and Big Rivers executed Amendments to various and sundry contracts (the "July 15, 1998 Amendments"). Paragraph 1 of the July 15, 1998 Amendments states, in part, "[t]he terms of all the Contracts except the Joint Facilities Agreement shall be considered to continue for the operating life of Station Two, the operating life of which shall be considered to continue for so long as Unit 1 and Unit 2, or either of them, is operated, or is capable of normal, continuous, reliable operation for the economically competitive production of electricity, temporary outages excepted."

The contract between Big Rivers and SEPA was executed June 30, 1998. In Section 1, that contract states, in part, that it "shall continue in effect until terminated on June 30 of any year by the Purchaser upon written notice given to the Administrator not less that thirty-seven (37) months in advance of the date of termination specified therein or by the Administrator upon written notice given to the Purchaser of not less than thirty-six (36) months in advance of the date of termination specified therein; provided, that no such termination shall be effective prior to midnight, June 30, 2017." Big Rivers is the Purchaser; SEPA is the Administrator.

Relevant excerpts from these contracts are attached hereto.

Respondent) Roger D. Hickman

WHEREAS, pursuant to the Contracts, and to ordinances of the City of Henderson, Kentucky providing for the sale of its electric revenue bonds, an electric generating station consisting of generating Units 1 and 2, each described in the Contracts as having a 175-megawatt capacity, and related facilities all known herein as "Station Two," were constructed and are now owned by the City of Henderson and operated by Big Rivers under the Contracts with Big Rivers, and

WHEREAS, City and Big Rivers now seek to amend the Contracts to reflect new understandings between the parties regarding the Contracts and the business relationship between City and Big Rivers.

NOW THEREFORE, in consideration of the mutual covenants herein contained, it is covenanted and agreed among the parties hereto as follows:

ALL CONTRACTS

1. The terms of all the Contracts except the Joint Facilities Agreement shall be extended for the operating life of Station Two, the operating life of which shall be considered to continue for so long as Unit 1 and Unit 2, or either of them, is operated, or is capable of normal, continuous, reliable operation for the economically competitive production of electricity, temporary outages excepted. Notwithstanding any other provision in the Contracts, all of the Contracts, except the Joint Facilities Agreement and the System Reserves Agreement, shall terminate 90 days after Big Rivers' allocation of capacity from City's Station Two shall be zero; provided, however, that the terms of all the Contracts shall be extended until all Station Two bonds of the City of Henderson which have been approved by Big Rivers have been paid. Notwithstanding the above, the Joint Facilities Agreement shall terminate in accordance with

Section 8 of said Agreement. This section expressly replaces the provisions of Section 1 of the May 1993 Amendments in their entirety.

2. The effective date of these 1998 Amendments shall be the date following their execution upon which the last of the following approvals of the 1998 Amendments is obtained:

2.1 Approval of the Rural Utilities Service; and

2.2 Approval of the Kentucky Public Service Commission.

3. Nothing herein contained shall constitute general obligations of the City of Henderson within Kentucky Constitutional restrictions on such obligations. The obligations herein imposed on City of Henderson shall be borne entirely from revenues or other legally available funds of City's electric light and power system.

POWER SALES CONTRACT

4. The Power Sales Contract of August 1, 1970, as heretofore amended, is further amended as follows:

(a) SECTION 3.4 IS HEREBY AMENDED TO BE AND READ IN ITS ENTIRETY AS FOLLOWS:

> 3.4 City agrees that it will not, after the execution and approval of this Agreement, (1) make any dispositions to others for resale of its generating capacity, other than pursuant to Section 3.8 added by these 1998 Amendments, except for the purpose of disposing of any surpluses resulting from good faith over-estimates of its needs, or (2) add any commercial or industrial customers in excess of thirty (30) megawatts each to its electric system, if to do either (1) or (2), as the case may be, would require the withdrawal of additional capacity from its Existing System and/or from Units One and Two of its Station Two. Expansions in the ordinary course of business of any commercial or industrial plants being served by City at the time of the execution of these 1998 Amendments shall not be considered added commercial or industrial customers subject to the 30 megawatt size limitation for the purposes of this Agreement. Surplus capacity resulting from good faith over estimates as referred to in (1) above shall be first offered to Big Rivers at City's

0.7 WHEREAS the Administrator has entered into an agreement executed October 1, 1997, Contract No. 89-00-1501-1129 (hereinafter called Government-TVA Contract), whereby the Cumberland Projects will be operated and TVA transmission facilities will be utilized to implement the aforesaid written power marketing policy, including delivery of the Purchaser's allocation to interconnection points between the Purchaser and TVA; and

0.8 WHEREAS the parties hereto have agreed to sell and purchase power on the terms and conditions hereinafter set forth;

NOW, THEREFORE, the parties hereto mutually covenant and agree as follows:

Section 1. Effective Date and Term of Contract.

This contract shall become effective and all obligations of the parties hereto with respect to the delivery of power hereunder and payment therefor shall commence at midnight, June 30, 1998, and shall continue in effect until terminated on June 30 of any year by the Purchaser upon written notice given to the Administrator not less than thirty-seven (37) months in advance of the date of termination specified therein or by the Administrator upon written notice given to the Purchaser of not less than thirty-six (36) months in advance of the date of termination specified therein; provided, that no such termination shall be effective prior to midnight, June 30, 2017. This contract shall be contingent upon the Government securing alternate arrangements for the necessary services in the event of termination or cancellation of the Government-TVA Contract.

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Item 20) ***As to any pending federal environmental regulations, explain whether Big Rivers anticipates the need to accelerate the retirement of existing coal fired units. If so, identify the most likely units to be retired.***

Response) At this time, Big Rivers is not expecting to accelerate the retirement of existing coal-fired units based upon pending federal environmental regulations.

Respondent) Thomas L. Shaw and Lawrence V. Baronowsky

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Item 21) ***Explain whether Big Rivers currently has the human resources necessary to implement the current and planned DSM programs listed in the IRP. If the human resources do not exist, explain whether the new resources would be dedicated solely to DSM projects or be shared with other utility services.***

Response) The DSM programs for Big Rivers and its Members are in the initial stages of development. A number of parameters, currently being explored in pilot projects, will determine the balance of resources necessary to accomplish the goals established in the final DSM plan.

Respondent) Russell L. Pogue

BIG RIVERS ELECTRIC CORPORATION

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Item 22) ***Refer to the last paragraph on page 13 of Appendix B, Demand Side Management: Big Rivers Final Potential Study and Big Rivers' response to Item 28 of Commission Staffs First Information Request ("Staffs First Request").***

a. Provide, as a percentage, the ratio of Big Rivers' annual investment in DSM relative to its annual electric sales revenue for the years 2011 through 2025.

b. Provide, as a percentage, the ratio of Big Rivers' annual energy efficiency savings relative to its total electric sales for the years 2011 through 2025.

c. Describe how the responses to parts a. and b. of this request compare with the findings in the top energy efficiency states.

Response)

a. As a percentage, the ratio of Big Rivers' annual investment in DSM programs relative to Big Rivers' total annual electric sales revenue for the years 2011 through 2025 are presented in the table on the following page. Currently, direct serve large industrial customers represent approximately 77% of Big Rivers' total system energy sales. Big Rivers' DSM/EE programs are designed for rural system customers (residential, commercial, and small and mid-sized industrial), which comprise approximately 23% of Big Rivers' total system sales. Consequently, DSM investments, which correspond to rural system customers, as a percentage of total systems sales revenue, are low. Projections of rural system sales revenue were not developed for the 2010 IRP or the 2009 Load Forecast, so the information needed

to present DSM investment dollars as a percentage of rural system revenue is not available.

	Total DSM Investment ($) (a)	Total Annual Sales Revenue ($000s) (b)	Percent (c) = (a) / [(b) x 1000]
2011	998,050	472,408	0.21%
2012	1,020,025	523,439	0.19%
2013	1,052,625	536,355	0.20%
2014	1,074,325	556,061	0.19%
2015	1,100,850	575,674	0.19%
2016	1,129,550	588,929	0.19%
2017	1,154,525	588,669	0.20%
2018	1,177,125	618,994	0.19%
2019	1,229,350	631,059	0.19%
2020	1,249,625	646,520	0.19%
2021	1,285,350	660,548	0.19%
2022	1,301,650	675,158	0.19%
2023	1,345,825	675,278	0.20%
2024	1,380,925	669,765	0.21%
2025	1,413,725	649,986	0.22%

b. As a percentage, the ratio of Big Rivers' annual energy efficiency savings relative to Big Rivers' total electric sales for the years 2011 through 2025 are presented in the table on the following page. Currently, direct serve industrial customers represent approximately 77% of Big Rivers' total system energy sales. Big Rivers' Energy

Efficiency programs are designed for rural system customers (residential and commercial); therefore, the ratio of Big Rivers' annual Energy Efficiency savings relative to Big Rivers' rural system electric sales for the years 2011 through 2025, expressed as a percentage, are also presented in the table.

	Cumulative Annual Residential Savings (kWh)	Cumulative Annual Commercial Savings (kWh)	Total Savings (MWh)	Total System Electric Sales (MWh)	Cumulative Savings as Percent of Total Sales		Rural System Electric Sales (MWh)	Cumulative Savings as Percent of Rural Sales
2011	2,288	1,128	3,416	9,895,589	0.0%		2,272,964	0.2%
2012	4,723	2,416	7,139	9,927,187	0.1%		2,304,562	0.3%
2013	7,211	3,750	10,962	9,955,776	0.1%		2,333,151	0.5%
2014	9,201	5,244	14,445	9,988,576	0.1%		2,365,951	0.6%
2015	11,238	6,770	18,009	10,025,706	0.2%		2,403,081	0.7%
2016	13,329	8,344	21,673	10,062,542	0.2%		2,439,917	0.9%
2017	15,464	9,950	25,414	10,105,276	0.3%		2,482,651	1.0%
2018	16,937	11,602	28,540	10,147,286	0.3%		2,524,661	1.1%
2019	18,493	13,335	31,828	10,189,820	0.3%		2,567,195	1.2%
2020	19,778	15,067	34,845	10,227,323	0.3%		2,604,698	1.3%
2021	21,525	16,177	37,702	10,270,752	0.4%		2,648,126	1.4%
2022	23,149	17,194	40,343	10,312,156	0.4%		2,689,531	1.5%
2023	24,697	18,243	42,940	10,353,157	0.4%		2,730,532	1.6%
2024	26,141	19,245	45,386	10,394,157	0.4%		2,771,532	1.6%
2025	27,607	20,280	47,887	10,435,157	0.5%		2,812,532	1.7%

c. Please see Table 4 (2007 Electricity Efficiency Program Spending by State) and Table 6 (2007 Incremental Electricity Savings by State) of the American Council for an Energy-Efficient Economy 2009 Scorecard which is provided on the CD accompanying these responses.

Respondent)

a. and b. John W. Hutts and Richard F. Spellman

c. Richard F. Spellman

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Item 23) ***Refer to the response to Item 2 of Staffs First Request.***

a. State whether the proposed new two-way radio system is to be capitalized or leased.

b. If the proposed new two-way radio system is to be leased ---

(1) Explain whether the lease agreement will be for a capital or operating lease.

(2) Provide the terms of the lease, including the length of the lease, interest rate and buyout or termination provisions.

Response)

a. Big Rivers will capitalize the new two-way radio system.

b. Not applicable.

Respondent) Glen D. Thweatt

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Item 24) ***Refer to the attachment to the response to Item 4 of Staffs First Request, specifically, the column headed Reason for Not Including.***

a. The reason provided for a number of programs is "Not widely applicable." Expand on what is meant by "Not widely applicable."

b. The reason provided for some programs is "Marginally cost effective." Describe how "marginally cost effective" was defined and how uniformly the definition was applied.

Response)

a. These measures are not as applicable to a home or business as other measures that were included in programs. In the future these cost-effective measures should be considered for programs, but not as a part of the ones for immediate implementation.

b. Marginally cost effective is when a measure is barely over a 1.0 ratio. When applying these measures there is more risk of not being cost effective when actual implementation takes place.

Respondent) Richard F. Spellman

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Item 25) ***Refer to the response to Item 10 of Staffs First Request, which states that "[a]dministration costs are bundled and include program design, program implementation, reporting and tracking, marketing, and labor costs." Explain whether the resources that are to be expended for these administration costs are currently part of Big Rivers' base rates and, if yes, how these costs will be accounted for in the future.***

Response) Yes, the resources that are to be expended for these administration costs are currently part of Big Rivers' base rates. It is the current intention of Big Rivers' to account for all costs, including administrative, associated with DSM programs in base rates. Please see Big Rivers' response to Item 35 of Staff's 2nd Data Request.

Respondents) Russell L. Pogue

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Item 26) ***Refer to the response to Item 14 of Staffs First Request.***

a. Provide a schedule which shows the components that make up the estimated costs of retrofitting Green Units 1 and 2 with selective catalytic reduction devices ("SCRs").

b. Item 14 of Staffs First Request referred to Big Rivers' coal-fired units requiring additional controls if mercury control was required on a unit-by-unit basis. If space limitations make it impossible to install SCRs on the Coleman units, explain whether the imposition of unit-by-unit mercury control would require that they be retired.

Response)

a. SCR 90% removal – design, construct, and material $46.1 million
Remaining open items:
(1) Underground relocations, *etc.* - $5.4 million
(2) Structural modifications, *etc.* - $2.0 million
(3) Distributed Control System control engineering – $0.5 million
Total budgetary estimate - $54.0 million per unit, or $108.0 million for both Green Units.

b. The Coleman Units are not planned to be retired as a result of unit specific emission rates for mercury. SCR's are one of several control strategies for mercury. Big Rivers will evaluate control strategies at the time the proposed Hazardous Air Pollutants requirements are published by the U.S. Environmental Protection Agency. The

appropriate control strategy will be based upon the control technology that can meet the published requirements and space limitations at Coleman Station.

Respondents) Thomas L. Shaw and Lawrence V. Baronowsky

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Item 27) ***Refer to the last sentence of the response to Item 15 of Staffs First Request. Identify the specific level of generation reduction that Big Rivers expects will be necessary if the first compliance date of the proposed Clean Air Transport Rule is January 1, 2012.***

Response) Big Rivers' generation projections indicate that Big Rivers must reduce generation in order to meet the proposed NOx allocations under the Clean Air Transport Rule for 2012. In order to meet the proposed allocations, Big Rivers will not operate the Reid coal unit and will reduce generation at one or more of its other units as needed.

Respondents) Thomas L. Shaw and Lawrence V. Baronowsky

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Item 28) ***Refer to the response to Item 16 of Staffs First Request. When they are known, provide the actual Rural System energy requirements and coincident peak demand for 2010.***

Response) The actual Rural System energy requirements and coincident peak demand for 2010 are as follows –

1. Rural System energy requirements: 2,499,895 MWh
2. Rural System coincident peak demand: 544 MW

Respondent) Michael J. Mattox

BIG RIVERS ELECTRIC CORPORATION

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Item 29) ***Refer to the response to item 22.a. of Staffs First Request, which lists 10 regression models. These models were applied generally to each of the distribution cooperatives and the results are presented in Attachment 1 – 2011-01-28. However, the specification of each of the respective models as applied to the distribution cooperatives is not uniform. For each model as applied to each distribution cooperative provide a discussion and description of:***

a. Each variable used in each model;
b. The ultimate choice of variables used in each of the distribution cooperatives model;
c. The differences between each of the model specifications; and
d. Why a calibration factor was applied to the models and whether the calibration factor was only applied to the residential and small commercial models.

Response) Please see the attached table for the information requested.

Respondent) John W. Hutts

Big Rivers Electric Corporation
2010 Integrated Resource Plan
Model Specifications for Distribution Cooperatives

Line No.	Coop	Forecast Horizon	Dependent Variable 29a & 29b	Independent Variables 29a & 29b	Model Specification Comments 29c and 29d
1 2 3 4 5 6 7 8	MCRECC[1]	Short-term	Residential Customers	One month lag of residential customers, Autoregressive term	Number of households was tested as an independent variable, but the specification failed statistical testing (t-statistic). The modeled projections were calibrated to the last period in the base historical year to remove the unexplained model forecasting error from the forecast horizon.
9 10 11 12 13 14 15 16 17 18 19 20	MCRECC	Long-term	Residential Customers	Number of households, Autoregressive term	Number of households is theoretically the best predictor of residential customers. The number of residential customers actually represents the number of meters, which more closely corresponds to number of households rather than to population or some other demographic variable. The modeled projections were calibrated to the last period of the short-term forecast to remove the unexplained model forecasting error from the long-term forecast horizon.
21 22 23 24 25 26 27 28 29 30 31 32 33 34	MCRECC	Short-term	Residential Use per Customer	Time trend Heating degree days Cooling degree days	The time trend variable captures the overall upward/downward/flat slope over the recent past and extrapolates that trend over the near term forecast horizon. The monthly heating and cooling degree days are expressed on a billing cycle basis (average of current and prior month's values) and capture the variability in billing month consumption due to weather. The modeled projections were calibrated to the last period in the base historical year to remove the unexplained model forecasting error from the forecast horizon.

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Line No.	Coop	Forecast Horizon	Dependent Variable 29a & 29b	Independent Variables 29a & 29b	Model Specification Comments 29c and 29d
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	MCRECC	Long-term	Residential Use per Customer	Base energy index Heating index Cooling index Heating index (lag) Cooling index (lag)	Refer to Big Rivers' 2009 Load Forecast, section 8.3, pages 33-35 for a description of the independent variables. One-month lag values for the heating and cooling indexes were included as independent variables to account for billing cycle energy. These two indexes are based on calendar month degree days; therefore, use of the current and previous month's weather captures the changes in billing cycle energy better than use of just the current month's weather. The modeled projections were calibrated to the last period of the short-term forecast to remove the unexplained model forecasting error from the long-term forecast horizon.
18 19 20 21 22 23 24 25 26 27 28 29 30 31	MCRECC	Short-term	Small Commercial Customers	Average of Employment and Number of Households	The average of total employment and number of households was used as growth in the number of small commercial customers is driven by economic activity and residential expansion. Their associated impacts were combined into one independent variable to avoid the collinearity problems that exist if the two were specified on an individual basis. The modeled projections were calibrated to the last period in the base historical year to remove the unexplained model forecasting error from the forecast horizon.

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Line No.	Coop	Forecast Horizon	Dependent Variable 29a and 29b	Independent Variables 29a and 29b	Model Specification Comments 29c and 29d
1	MCRECC	Long-term	Small Commercial Customers	Average of Employment and Number of Households; One-month lag in customers	The average of total employment and number of households was used as growth in the number of small commercial customers is driven by economic activity and residential expansion. There associated impacts were combined into one independent variable to avoid the collinearity problems that exist if the two were specified on an individual basis. The lag of number of customers was included to capture changes in growth due to a customer reclassification and changes in growth not captured by the employment/household transformation variable. The modeled projections were calibrated to the last period of the short-term forecast to remove the unexplained model forecasting error from the long-term forecast horizon.
20	MCRECC	Short-term	Small Commercial use per Customer	Time trend, Heating degree days, Cooling degree days, One month lag of Heating degree days, One month lag of Cooling degree days	The time trend variable captures the overall upward/downward/flat slope over the recent past and extrapolates that trend over the near term forecast horizon. Calendar month heating and cooling degree days, and their respective one-month lag values, capture the variability in monthly billing cycle consumption due to weather. The modeled projections were calibrated to the last period in the base historical year to remove the unexplained model forecasting error from the forecast horizon.

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Line No.	Coop	Forecast Horizon	Dependent Variable 29a and 29b	Independent Variables 29a and 29b	Model Specification Comments 29c and 29d
1	MCRECC	Long-term	Small Commercial use per Customer	Ratio of Real retail sales to total employment, Heating degree days, Cooling degree days, One month lag of Heating degree days, One month lag of Cooling degree days, One-month lag of use per customer	The ratio of real retail sales per total employment captures the economic activity on a per employment basis, rather than totalized basis, which corresponds to sales on a per customer basis. Calendar month heating and cooling degree days, and their respective one-month lag values, capture the variability in monthly billing cycle consumption due to weather. The lag of the dependent variable captures changes in energy use per customer that are not quantified by the economic and weather variables. The modeled projections were calibrated to the last period of the short-term forecast to remove the unexplained model forecasting error from the long-term forecast horizon.
19	MCRECC	Long-term	Rural System Summer peak demand	Rural system energy requirements, Maximum peak month temperature	It was assumed that rural summer peak demand would continue to be highly correlated with annual rural energy requirements (stable load factor) and that fluctuations in historical summer peak demand were due predominately to fluctuations in maximum temperature. The modeled projections were calibrated to the last period in the base historical year to remove the unexplained model forecasting error from the forecast horizon.

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Line No.	Coop	Forecast Horizon	Dependent Variable 29a and 29b	Independent Variables 29a and 29b	Model Specification Comments 29c and 29d
1 2 3 4 5 6 7 8 9 10 11 12	MCRECC	Long-term	Rural System Winter peak demand	Rural system energy requirements, Minimum peak month temperature	It was assumed that rural winter peak demand would continue to be highly correlated with annual rural energy requirements (stable load factor) and that fluctuations in historical winter peak demand were due predominately to fluctuations in minimum temperature. The modeled projections were calibrated to the last period in the base historical year to remove the unexplained model forecasting error from the forecast horizon.
13 14 15 16 17 18 19 20 21	JPEC[2]	Short-term	Residential Customers	One month lag of residential customers, Autoregressive term	Number of households was tested as an independent variable, but the specification failed statistical testing (incorrect sign on the household coefficient). The modeled projections were calibrated to the last period in the base historical year to remove the unexplained model forecasting error from the forecast horizon.
22 23 24 25 26 27 28 29 30 31 32 33	JPEC	Long-term	Residential Customers	Number of households, Autoregressive term	Number of households is theoretically the best predictor of residential customers. The number of residential customers actually represents the number of meters, which more closely corresponds to number of households rather than to population or some other demographic variable. The modeled projections were calibrated to the last period of the short-term forecast to remove the unexplained model forecasting error from the long-term forecast horizon.

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Line No.	Coop	Forecast Horizon	Dependent Variable 29a and 29b	Independent Variables 29a and 29b	Model Specification Comments 29c and 29d
1	JPEC	Short-term	Residential Use per Customer	Time trend Heating degree days Cooling degree days	The time trend variable captures the overall upward/downward/flat slope over the recent past and extrapolates that trend over the near term forecast horizon. The monthly heating and cooling degree days are expressed on a billing cycle basis (average of current and prior month's values) and capture the variability in monthly billing cycle consumption due to weather. The modeled projections were calibrated to the last period in the base historical year to remove the unexplained model forecasting error from the forecast horizon.
15	JPEC	Long-term	Residential Use per Customer	Base energy index Heating index Cooling index	Refer to Big Rivers' 2009 Load Forecast, section 8.3, pages 33-35 for a description of the independent variables. The modeled projections were calibrated to the last period of the short-term forecast to remove the unexplained model forecasting error from the long-term forecast horizon.
23	JPEC	Short-term	Small Commercial Customers	One-month lag of number of customers	Theoretically, the average of total employment and number of households is the best indicator of growth in customers as it captures the impacts of economic activity and residential expansion. The variable passed the t-statistics test, but the specification was not used because the model predicted negative customer growth, which was concluded to be unreasonable as positive growth was recorded during the recent history. The final model predicts customer growth as a function of past growth, which is essentially a trend model. The modeled projections were calibrated to the last period in the base historical year to remove the unexplained model forecasting error from the forecast horizon.

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Line No.	Coop	Forecast Horizon	Dependent Variable 29a and 29b	Independent Variables 29a and 29b	Model Specification Comments 29c and 29d
1	JPEC	Long-term	Small Commercial Customers	Employment; One-month lag in customers	The employment parameter was only significant at the 52% probability level; therefore, changes in projected employment have little impact on the customer forecast. The lag of number of customers was included to capture changes in growth not captured by the employment variable. The modeled projections were calibrated to the last period of the short-term forecast to remove the unexplained model forecasting error from the long-term forecast horizon.
14	JPEC	Short-term	Small Commercial use per Customer	Time trend, Heating degree days, Cooling degree days,	The time trend variable captures the overall upward/downward/flat slope over the recent past and extrapolates that trend over the near term forecast horizon. Calendar month heating and cooling degree days capture the variability in monthly billing cycle consumption due to weather. The modeled projections were calibrated to the last period in the base historical year to remove the unexplained model forecasting error from the forecast horizon.

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Line No.	Coop	Forecast Horizon	Dependent Variable 29a and 29b	Independent Variables 29a and 29b	Model Specification Comments 29c and 29d
1	JPEC	Long-term	Small Commercial use per Customer	Ratio of Real retail sales to total employment, Heating degree days, Cooling degree days, 12-month lag of use per customer	The ratio of real retail sales per total employment captures the economic activity on a per employment basis, rather than totalized basis, which corresponds to sales on a per customer basis. Calendar month heating and cooling degree days capture the variability in monthly billing cycle consumption due to weather. The lag of the dependent variable captures changes in energy use per customer that are not quantified by the economic and weather variables. The modeled projections were calibrated to the last period of the short-term forecast to remove the unexplained model forecasting error from the long-term forecast horizon.
18	JPEC	Long-term	Rural System Summer peak demand	Rural system energy requirements, Maximum peak month temperature	It was assumed that rural summer peak demand would continue to be highly correlated with annual rural energy requirements (stable load factor) and that fluctuations in historical summer peak demand were due predominately to fluctuations in maximum temperature. The modeled projections were calibrated to the last period in the base historical year to remove the unexplained model forecasting error from the forecast horizon.
30	JPEC	Long-term	Rural System Winter peak demand	Rural system energy requirements, Minimum peak month temperature	It was assumed that rural winter peak demand would continue to be highly correlated with annual rural energy requirements (stable load factor) and that fluctuations in historical winter peak demand were due predominately to fluctuations in minimum temperature. The modeled projections were calibrated to the last period in the base historical year to remove the unexplained model forecasting error from the forecast horizon.

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Line No.	Coop	Forecast Horizon	Dependent Variable 29a and 29b	Independent Variables 29a and 29b	Model Specification Comments 29c and 29d
1	KENERGY[3]	Short-term	Residential Customers	One month lag of residential customers	Number of households was tested as an independent variable, but the specification failed the reasonableness test as the model projected customer growth that was significantly above recent history and inconsistent with expectations regarding growth during an economic slump. The modeled projections were calibrated to the last period in the base historical year to remove the unexplained model forecasting error from the forecast horizon.
13	KENERGY	Long-term	Residential Customers	Number of households, Binary variable, One-month lag of residential customers	Number of households is theoretically the best predictor of residential customers. The number of residential customers actually represents the number of meters, which more closely corresponds to number of households rather than to population or some other demographic variable. A binary variable was included and set to 1 in 2006 and beyond (0 otherwise) to represent a reclassification of customers in 2006. A one-month lag of the dependent variable was also included to capture changes in the number of customers not quantified by number of households. The modeled projections were calibrated to the last period of the short-term forecast to remove the unexplained model forecasting error from the long-term forecast horizon.

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Line No.	Coop	Forecast Horizon	Dependent Variable 29a and 29b	Independent Variables 29a and 29b	Model Specification Comments 29c and 29d
1	KENERGY	Short-term	Residential Use per Customer	Time trend Heating degree days Cooling degree days	The time trend variable captures the overall upward/downward/flat slope over the recent past and extrapolates that trend over the near term forecast horizon. The monthly heating and cooling degree days are expressed on a billing cycle basis (average of current and prior month's values) and capture the variability in monthly billing cycle consumption due to weather. The modeled projections were calibrated to the last period in the base historical year to remove the unexplained model forecasting error from the forecast horizon.
15	KENERGY	Long-term	Residential Use per Customer	Base energy index Heating index Cooling index Heating index (lag) Cooling index (lag)	Refer to Big Rivers' 2009 Load Forecast, section 8.3, pages 33-35 for a description of the independent variables. One-month lag values for the heating and cooling indexes were included as independent variables to account for billing cycle energy. These two indexes are based on calendar month degree days; therefore, use of the current and previous month's weather captures the changes in monthly billing cycle energy better than use of just the current month's weather. The modeled projections were calibrated to the last period of the short-term forecast to remove the unexplained model forecasting error from the long-term forecast horizon.

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Line No.	Coop	Forecast Horizon	Dependent Variable 29a and 29b	Independent Variables 29a and 29b	Model Specification Comments 29c and 29d
1	KENERGY	Short-term	Small Commercial Customers	One-month lag of number of customers	Theoretically, the average of total employment and number of households is the best indicator of growth in customers as it captures the impacts of economic activity and residential expansion. The variable passed the t-statistics test, but the specification was not used because the model predicted negative customer growth, which was concluded to be unreasonable as positive growth was recorded during the recent history. The final model predicts customer growth as a function of past growth, which is essentially a trend model. The modeled projections were calibrated to the last period in the base historical year to remove the unexplained model forecasting error from the forecast horizon.
20	KENERGY	Long-term	Small Commercial Customers	Average of Employment and Number of Households, Binary variable	The average of total employment and number of households was used as growth in the number of small commercial customers is driven by economic activity and residential expansion. Their associated impacts were combined into one independent variable to avoid the collinearity problems that exist if the two were specified on an individual basis. A binary variable was included and set to 1 in 2005 and beyond (0 otherwise) to represent a reclassification of customers in 2005 and 2006. The modeled projections were calibrated to the last period of the short-term forecast to remove the unexplained model forecasting error from the long-term forecast horizon.

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Line No.	Coop	Forecast Horizon	Dependent Variable 29a and 29b	Independent Variables 29a and 29b	Model Specification Comments 29c and 29d
1 2 3 4 5 6 7 8 9 10 11 12 13	KENERGY	Short-term	Small Commercial use per Customer	Heating degree days, Cooling degree days	There has been no significant upward/downward trend in average use over the recent history; therefore, a time trend variable did not pass the t-statistic test and was excluded from the final model. Calendar month heating and cooling degree days capture the variability in monthly billing cycle consumption due to weather. The modeled projections were calibrated to the last period in the base historical year to remove the unexplained model forecasting error from the forecast horizon.
14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	KENERGY	Long-term	Small Commercial use per Customer	Ratio of Real retail sales to total employment, Heating degree days, Cooling degree days, Binary variables, Autoregressive term	The ratio of real retail sales per total employment captures the economic activity on a per employment basis, rather than totalized basis, which corresponds to sales on a per customer basis. Heating and cooling degree days capture the variability in monthly billing cycle consumption due to weather. Binary variables were included for the months of July-November to capture variations in monthly billing consumption not captured by weather. A binary variable was also included for December 2001 to account for bad data. The modeled projections were calibrated to the last period of the short-term forecast to remove the unexplained model forecasting error from the long-term forecast horizon.

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Model Specifications for Distribution Cooperatives

Line No.	Coop	Forecast Horizon	Dependent Variable 29a and 29b	Independent Variables 29a and 29b	Model Specification Comments 29c and 29d
1 2 3 4 5 6 7 8 9 10 11 12	KENERGY	Long-term	Rural System Summer peak demand	Rural system energy requirements, Maximum peak month temperature	It was assumed that rural summer peak demand would continue to be highly correlated with annual rural energy requirements (stable load factor) and that fluctuations in historical summer peak demand were due predominately to fluctuations in maximum temperature. The modeled projections were calibrated to the last period in the base historical year to remove the unexplained model forecasting error from the forecast horizon.
13 14 15 16 17 18 19 20 21 22 23 24	KENERGY	Long-term	Rural System Winter peak demand	Rural system energy requirements, Minimum peak month temperature	It was assumed that rural winter peak demand would continue to be highly correlated with annual rural energy requirements (stable load factor) and that fluctuations in historical winter peak demand were due predominately to fluctuations in minimum temperature. The modeled projections were calibrated to the last period in the base historical year to remove the unexplained model forecasting error from the forecast horizon.

[1] MCRECC = Meade County Rural Electric Cooperative Corporation
[2] JPEC = Jackson Purchase Energy Corporation
[3] Kenergy = Kenergy Corp.

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF BIG RIVERS ELECTRIC CORPORATION CASE NO. 2010-00443

Response to Commission Staff's Second Information Request dated February 11, 2011

February 25, 2011

Item 30) ***Refer to the response to Item 22 of Staffs First Request.***

a. Provide a discussion of how each distribution cooperative derived its system peak model. Include in the discussion an explanation of how "annual energy and peak demand projections were broken down by month by applying average monthly load shapes to the annual forecasted amounts."[1]

b. If a separate economic outlook report, including a load forecast, was prepared for each of the distribution cooperatives as a part of the IPR process, provide a copy of each report.

Response)

a. As presented in Big Rivers' response to Item 29 of the Staff's 2nd Data Request, rural system summer and winter peak demand models were developed for each of Big Rivers' three Members. The summer peak demand model for Big Rivers and each of its Members was developed using annual observations and specified the relationship between rural summer peak, annual rural energy, and maximum temperature during the summer peak month. The winter peak demand model for Big Rivers and each of its Members was developed using annual observations and specified the relationship between rural winter peak, annual rural energy, and minimum temperature during the winter peak month.

[1] Page 3 of 5 of the response, lines 10-12.

Annual rural system energy and rural peak demand projections were broken down by month to provide projections for the monthly short-term forecast. Annual projected amounts were broken down by applying average monthly load shapes to the annual forecasted amounts.

Monthly rural system energy for each Member was computed by applying an average monthly shape to annual rural system energy projections. The monthly energy shapes for each Member were based on weather normalized energy estimates for each month of 2008, the base historical year. The average energy shape represents the proportion of annual rural system energy corresponding to each month. The shape was assumed constant for the entire forecast horizon. The average monthly energy shape for each Member is presented in the table on the following page.

Monthly rural system peak demand for each Member was computed by applying an average monthly shape to the summer and winter seasonal peak demand projections. The monthly peak shapes for each Member were based on averages of historical data for years 2004-2008. The average peak shape represents the ratio of monthly peak to its corresponding seasonal peak. May-October were categorized as the summer season, while January-April and November-December were categorized as the winter season. The shape was assumed constant for the entire forecast horizon. The average monthly peak shape for each Member is presented in the table on the following page.

	Monthly Energy Shape				Monthly Peak Shape		
Mo	Kenergy[1]	JPEC[2]	MCRECC[3]		Kenergy	JPEC	MCRECC
1	0.10112	0.09877	0.11139	Winter	1.00000	0.96000	1.00000
2	0.08785	0.08698	0.09684	Winter	0.87000	0.87000	0.79000
3	0.08098	0.07907	0.08546	Winter	0.75000	0.80000	0.68000
4	0.06440	0.06448	0.06400	Winter	0.63000	0.75000	0.54000
5	0.06894	0.07112	0.06504	Summer	0.72000	0.72845	0.62499
6	0.08423	0.08724	0.07659	Summer	0.86000	0.91000	0.88000
7	0.09835	0.09953	0.09001	Summer	0.97000	1.00000	1.00000
8	0.09600	0.09786	0.08866	Summer	1.00000	0.97265	0.92000
9	0.07307	0.07526	0.06763	Summer	0.88000	0.83000	0.80000
10	0.06743	0.06677	0.06446	Summer	0.63000	0.68000	0.68000
11	0.07683	0.07495	0.08048	Winter	0.77000	0.77000	0.68000
12	0.10080	0.09798	0.10943	Winter	0.90000	1.00000	0.86000

b. The load forecast used in development of the 2010 IRP is represented as the Big Rivers' Board approved 2009 Load Forecast adjusted for differences between projected and actual weather normalized energy and peak demand requirements for 2009. Updated economic outlooks and load forecasts were not developed for Big Rivers' Members as part of the IRP process.

Respondent) John W. Hutts

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[1] Kenergy = Kenergy Corp.

[2] JPEC = Jackson Purchase Energy Corporation

[3] MCRECC = Meade County Rural Electric Cooperative Corporation

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2010-00443

Response to Commission Staff's Second Information Request
dated February 11, 2011

February 25, 2011

Item 31) ***Refer to the response to Item 26 of Staffs First Request.***

a. Identify and describe the base case assumptions that Big Rivers' management thought were the most likely to occur and explain the basis for those assumptions.

b. Explain how the optimistic and pessimistic views take into account local economic activity.

c. Identify and describe how the assumptions for each of the optimistic and pessimistic views each differ from the base case assumptions and explain the basis for those assumptions.

Response)

a. Please refer to Big Rivers' 2009 Load Forecast, section 1.2, pages 2-3, and section 4.0, pages 15-18. In addition, the base case forecast is based on the assumption that no new large commercial customers with annual peak demand in excess of 1 MW will come on line during the forecast horizon. Woods and Poole Economics is the basis of the economic outlook. Input from Member management is the basis for the real price projections. Utility industry practice and acceptance by the Rural Utilities Services is the basis of using 20 years for computing normal weather conditions.

b. The forecasting models in the base case forecast were developed using county level data for those counties served by each Member; therefore, the base case represents local economic activity. Similarly, the optimistic and pessimistic forecast scenarios are based on variations in the growth rates for local economic activity represented in the base case. While the optimistic and pessimistic forecast scenarios address

potential deviations in average long-term economic growth (*e.g.*, number of households, household income), they do not address specific events, such as a particular plant closing or individual housing developments.

c. The table below presents the long-term growth rates for those economic variables used in developing the optimistic and pessimistic forecast scenarios. The optimistic and pessimistic growth rates reflect base case growth rates plus/minus percentage amounts, which were developed subjectively upon review of historical growth rates for each variable.

	Base Case			Optimistic Case			Pessimistic Case		
	MCRECC[1]	JPEC[2]	Kenergy[3]	MCRECC	JPEC	Kenergy	MCRECC	JPEC	Kenergy
Household Income	0.5%	1.1%	0.1%	2.0%	2.6%	1.6%	-1.0%	-0.4%	-1.4%
Employment	0.9%	0.7%	0.4%	1.7%	1.7%	1.1%	0.2%	-0.3%	-0.4%
Retail Sales	1.8%	1.4%	1.1%	3.6%	3.4%	2.6%	0.1%	-0.6%	-0.4%
Retail Sales/Emp	0.9%	0.7%	0.8%	1.9%	1.7%	1.5%	-0.1%	-0.3%	0.0%

Assumptions regarding residential and small commercial customer growth and rural large commercial sales were the same across all three Members. Customer growth was increased by 50% or decreased by 25%, respectively, for the optimistic and pessimistic scenarios. For example, if customer growth in a given year was 400 in the base case forecast, growth for that year would be 600 in the optimistic scenario and 300 in the pessimistic scenario. The magnitude of the range was determined based on an analysis of historical customer growth. Base case rural system large commercial energy sales in each year were

[1] MCRECC = Meade County Rural Electric Cooperative Corporation

[2] JPEC = Jackson Purchase Energy Corporation

[3] Kenergy = Kenergy Corp.

increased/decreased by 10% to represent the optimistic and pessimistic scenarios.

Respondent) John W. Hutts

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2010-00443

Response to Commission Staff's Second Information Request
dated February 11, 2011

February 25, 2011

Item 32) ***Refer to the response to Item 27 of Staff's First Request. Given the statement in the GDS report that "[t]he authors of this report emphasize that only energy efficiency measures that cost less than new power supply resources are considered to be cost effective," provide a more thorough explanation of how the authors of the GDS Report did not exclude from cost effectiveness the types of programs described in parts a. and b. of Item 27.***

Response) For the types of programs listed in Item 27(a) of Staff's First Request, GDS did include in its energy efficiency potential study measures that utilities may use in order to delay or avoid the need to upgrade existing, or install new, transmission facilities. The GDS study includes a wide array of energy efficiency and demand response measures. For the types of programs listed in Item 27(b) of Staff's First Request, GDS did include in its energy efficiency potential study measures that utilities may use to avoid running, or running as often, existing higher-cost supply-side resources. As noted above, the GDS study includes a wide array of energy efficiency and demand response measures.

The sentence in the report that reads "[t]he authors of this report emphasize that only energy efficiency measures that cost less than new power supply resources are considered to be cost effective" should be re-worded to say "[t]he authors of this report emphasize that only energy efficiency measures that cost less than the avoided capital and operating costs of power supply resources are considered to be cost effective."

Respondent) Richard F. Spellman

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CASE NO. 2010-00443

Response to Commission Staff's Second Information Request
dated February 11, 2011

February 25, 2011

Item 33) ***Refer to the response to Item 33 of Staffs First Request and pages 62 to 64 of the GDS Report. The response indicates the Big Rivers' staff performed a review of Kentucky's five other electric generating utilities' direct load control programs by visiting those utilities' websites. The GDS Report reflects that for the screening analysis, assumed incentives were $36 annually for "AC 33% cycling" and $48 annually for "AC 50% cycling." Three of the state's other generating utilities, Kentucky Utilities Company, Louisville Gas and Electric Company, and East Kentucky Power Cooperative, Inc., offer air conditioning direct load programs with incentives of only $20 annually. Provide a cost effectiveness analysis of the 33 and 50 percent cycling programs based on this lower incentive amount.***

Response) The table below compares the Total Resource Cost Test results for the analysis as provided in Big Rivers' 2010 IRP and for an annual incentive of $20 per year as requested.

Item	AC – 33% Recycling	AC – 50% Recycling
As Presented in 2010 IRP (Appendix B – GDS Report, Table 8.3, Page 58)		
Annual Incentive	$36	$48
NPV Benefits	$287	$428
NPV Costs	$647	$740
Benefit-Cost Ratio	0.44	0.58
As Requested in Item 33		
Annual Incentive	$20	$20
NPV Benefits	$287	$428
NPV Costs	$524	$524
Benefit-Cost Ratio	0.55	0.82

Respondent) Jacob M. Thomas

BIG RIVERS ELECTRIC CORPORATION

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BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2010-00443

Response to Commission Staff's Second Information Request
dated February 11, 2011

February 25, 2011

Item 34) ***Refer to the response to Item 20 of the Attorney General's ("AG") initial data request.***

a. Provide, for each year from 2003 through 2010, the number of compact fluorescent bulbs ("CFL") distributed by its member-owners and Big Rivers' costs of those CFLs.

b. Explain whether the CFL program was continued during 2010. If it was continued, provide the number of CFLs that was distributed.

Response)

a. Please see the attached table for the number of CFLs distributed by Big Rivers and its Members. As shown on that table, Big Rivers' cost for these CFLs for 2003-2010 was over $215,000.

b. The residential efficient lighting program was continued in 2010. See the table attached to Big Rivers' response to Item 34a of the Staff's 2nd Data Request.

Respondent) Russell L. Pogue

Big Rivers Electric Corporation
CFL History for Big Rivers and its Members
2003 through 2010

Year	2003	2004	2005	2006	2007	2007	2008	2009	2010
Manufacturer	TCP	TCP	TCP	TCP	TCP	TCP	TCP	TCP	TCP
Model	HD Closeouts	UB144KY	UB144KY	UB144KY	UB144KY	Ozone23	UB144KY	8101935	8101935
Cost per CFL	$1.42	$1.95	$1.85	$1.80	$1.65	$2.10	$1.60	$1.66	$1.66
Big Rivers	0	0	0	3,072	0	1,008		0	0
Jackson Purchase	910	912	912	1,824	10,608	0	6,048	12,096	6048
Kenergy	1,820	1,824	0	3,408	16,320	0	14,064	9,072	6000
Meade County	1,509	1,536	1,632	1,728	8,976	0	1,776	5,376	3504
Total	4,239	4,272	2,544	10,032	35,904	1,008	21,888	26,544	15,552
Cost Subtotal	$6,019.38	$8,330.40	$4,706.40	$18,057.60	$59,241.60	$2,116.80	$35,020.80	$44,063.04	$25,816.32
Sales Tax	361.16	499.82	282.38	1,083.46	3,554.50	127.01	2,101.25	2,643.78	1,548.98
Total Cost	$6,380.54	$8,830.22	$4,988.78	$19,141.06	$62,796.10	$2,243.81	$37,122.05	$46,706.82	$27,365.30

Overall Cost 2003-2010 **$215,574.68**

Cooperative	Date	Product	Quantity	Unit Cost	Amount including sales tax
Jackson Purchase	11/23/2009	80101935	6048	$1.66	$10,642.06
Kenergy	11/18/2009	80101935	6000	$1.66	$10,557.60
Meade County	11/3/2009	80101935	3504	$1.66	$6,165.64
				TOTAL	**$27,365.30**

Case No. 2010-00443
Witness: Russell L. Pogue
Item 34 - Attachment

BIG RIVERS ELECTRIC CORPORATION

2010 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2010-00443

Response to Commission Staff's Second Information Request
dated February 11, 2011

February 25, 2011

Item 35) ***Refer to the response to Item 22 of the AG's initial data request. Big Rivers states that DSM programs previously implemented were funded through base rates rather than the DSM mechanism as defined in KRS 278.285.***

a. Explain whether Big Rivers and its member-owners have discussed possible recovery through a surcharge mechanism and whether all are in agreement concerning DSM cost recovery.

b. If it plans to use a surcharge mechanism to recover DSM costs, explain whether Big Rivers has considered annual or semi-annual filings for the recovery and true-up of DSM costs via a DSM factor.

Response)

a. Big Rivers and its Members have discussed possible recovery through a DSM surcharge mechanism. All agree, at this time, that recovery of DSM costs through base rates is their preferred course of action.

b. Big Rivers does not, at this time, plan to use a DSM surcharge mechanism to recover DSM costs.

Respondent) Russell L. Pogue