

RECEIVED

JUL 26 2013

PUBLIC SERVICE  
COMMISSION

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Frankfort, KY 40602-0634  
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[502] 223-4124 Fax  
www.stites.com

July 26, 2013

**HAND DELIVERED**

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

Mark R. Overstreet  
(502) 209-1219  
(502) 223-4387 FAX  
moverstreet@stites.com

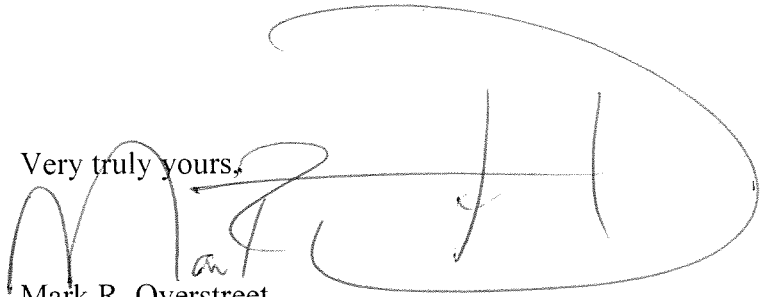
RE: Case No. 2012-00578

Dear Mr. Derouen:

Enclosed please find and accept for filing the original and eight copies of Kentucky Power Company's July 26, 2013 responses to the data requests propounded at the July 10-12, 2013 hearing in this matter. The Company also is filing herewith its motion for confidential treatment of one of the responses.

A copy of this letter and the Company's responses is being served by overnight delivery on the individuals indicated below and their associated counsel. Further, in accordance with Mr. Nguyen's request, a copy of the responses also is being served by overnight delivery on Messrs. Drabinski, Boismenu, and Buechel.

Jeff R. Derouen  
July 26, 2013  
Page 2

Very truly yours,  
  
Mark R. Overstreet

MRO

cc: Michael L. Kurtz  
Jennifer Black Hans  
Shannon Fisk  
Joe F. Childers  
Lane Kollen  
Rob Kapla  
Tim Woolf

RECEIVED

JUL 26 2013

PUBLIC SERVICE  
COMMISSION

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

In The Matter Of:

APPLICATION OF KENTUCKY POWER COMPANY FOR (1) A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY AUTHORIZING THE TRANSFER TO THE COMPANY OF AN UNDIVIDED FIFTY PERCENT INTEREST IN THE MITCHELL GENERATING STATION AND ASSOCIATED ASSETS; (2) APPROVAL OF THE ASSUMPTION BY KENTUCKY POWER COMPANY OF CERTAIN LIABILITIES IN CONNECTION WITH THE TRANSFER OF THE MITCHELL GENERATING STATION; (3) DECLARATORY RULINGS; (4) DEFERRAL OF COSTS INCURRED IN CONNECTION WITH THE COMPANY'S EFFORTS TO MEET FEDERAL CLEAN AIR ACT AND RELATED REQUIREMENTS; AND (5) ALL OTHER REQUIRED APPROVALS AND RELIEF

CASE NO. 2012-00578

**MOTION OF KENTUCKY POWER COMPANY  
FOR CONFIDENTIAL TREATMENT**

Kentucky Power Company moves the Public Service Commission of Kentucky pursuant to 807 KAR 5:001, Section 13(2), for an Order granting confidential treatment to the identified portions of Attachment 1 to its response to Commission Staff Post-Hearing Data Request 9.

Pursuant to 807 KAR 5:001, Section 13, Kentucky Power is filing under seal those portions of Attachment 1 to its response to Commission Staff Post-Hearing Data Request 9 with the confidential portions highlighted in yellow. Kentucky Power is also filing a redacted version

of the same. Kentucky Power will notify the Commission when it determines the information for which confidential treatment is sought is no longer confidential.

A. The Requests And The Statutory Standard.

Kentucky Power does not object to filing the identified information for which it is seeking confidential treatment, but requests that the identified portions of the attachment be excluded from the public record and public disclosure.

KRS 61.878(1)(c)(1) excludes from the Open Records Act:

Upon and after July 15, 1992, records confidentially disclosed to an agency or required to be disclosed to it, generally recognized as confidential or proprietary, which if openly disclosed would permit an unfair commercial advantage to competitors of the entity that disclosed the records.

This exception applies to the following information for which Kentucky Power is seeking confidential treatment:

(a) **Attachment 1 to Commission Staff Post-Hearing Data Request 9**

Attachment 1 includes unit-specific heat rate information for Glen Lynn Unit 5, owned and operated by Kentucky Power's affiliate, Appalachian Power Company. Unit-specific heat rate information can be used to derive the costs of producing electricity from that unit. If the unit-specific heat rate information became publically available, parties with which Kentucky Power or its affiliates may negotiate could use the production costs derived from the specific heat rates to the detriment of Kentucky Power, its customers, and Kentucky Power's affiliates. Knowledge of these unit specific costs by other potential transactional parties would establish certain benchmarks in negotiations, thereby potentially reducing the possible benefits of the transaction to the utilities and their ratepayers.

Kentucky Power seeks confidential treatment of the identified information for the remaining life of Glen Lynn Unit 5. After that time, the information that can be derived from the

unit-specific heat rate data will no longer provide any competitive advantage to the Company's or its affiliate's competitors to the detriment of rate payers.

B. The Identified Information is Generally Recognized As Confidential and Proprietary and Public Disclosure Of It Will Result In An Unfair Commercial Advantage for Kentucky Power's Competitors.

The identified information required to be disclosed by Kentucky Power in response to Commission Staff Post-Hearing Data Request 9 is highly confidential. The confidential information is not generally known or readily ascertainable by other parties through normal or proper means. No reasonable amount of legitimate independent research could yield this confidential information to other parties. Dissemination of the information for which confidential treatment is being requested is restricted by Kentucky Power, its affiliated operating companies, AEP, and AEPSC (the "AEP Entities"). The AEP Entities take all reasonable measures to prevent its disclosure to the public as well as persons within the AEP Entities who do not have a need for the information. The information is not disclosed to persons outside the AEP Entities. Within those organizations, the information is available only upon a confidential need-to-know basis that does not extend beyond those employees with a legitimate business need to know and act upon the identified information.

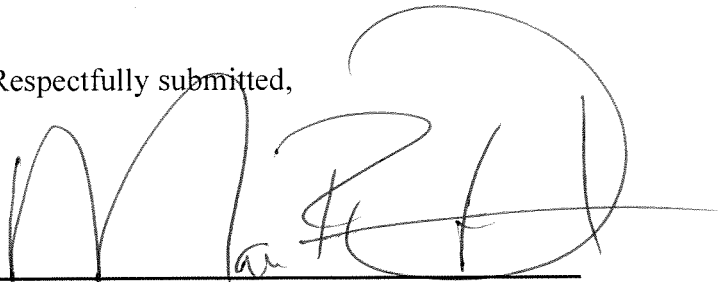
C. The Identified Information Is Required To Be Disclosed To An Agency.

The identified information is by the terms of the Commission's Order required to be disclosed to the Commission. The Commission is a "public agency" as that term is defined at KRS 61.870(1). Any filing should be subject to a confidentiality order and any party requesting such information should be required to enter into an appropriate confidentiality agreement.

WHEREFORE, Kentucky Power Company respectfully requests the Commission to enter an Order:

1. According confidential status to and withholding from public inspection the identified information; and
2. Granting Kentucky Power all further relief to which it may be entitled.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'MRO' followed by a large, stylized flourish that resembles a large 'R' or 'B' with a horizontal line extending to the right.

Mark R. Overstreet  
R. Benjamin Crittenden  
STITES & HARBISON PLLC  
421 West Main Street  
P. O. Box 634  
Frankfort, Kentucky 40602-0634  
Telephone: (502) 223-3477

Kenneth J. Gish, Jr.  
STITES & HARBISON PLLC  
250 West Main Street, Suite 2300  
Lexington, Kentucky 40507  
Telephone: (859) 226-2300

COUNSEL FOR KENTUCKY POWER  
COMPANY

**CERTIFICATE OF SERVICE**

I hereby certify that a copy of the foregoing was served by overnight delivery upon the following parties of record, this 26<sup>th</sup> day of July, 2013.

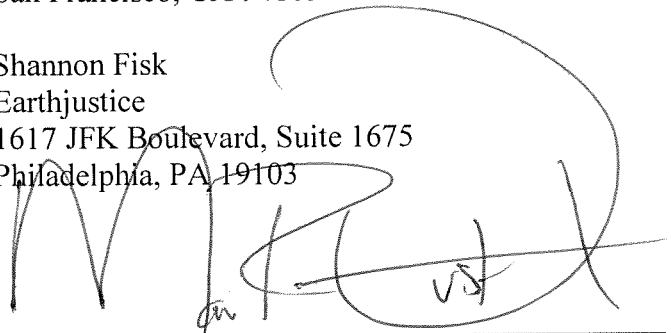
Michael L. Kurtz  
Jody Kyler Cohn  
Boehm, Kurtz & Lowry  
Suite 1510  
36 East Seventh Street  
Cincinnati, OH 45202

Joe F. Childers  
Joe F. Childers & Associates  
300 The Lexington Building  
201 West Short Street  
Lexington, KY 40507

Jennifer Black Hans  
Dennis G. Howard II  
Lawrence W. Cook  
Assistant Attorney General  
Office for Rate Intervention  
P.O. Box 2000  
Frankfort, KY 40602-2000

Robb Kapla  
Sierra Club  
85 Second Street  
San Francisco, CA 94105

Shannon Fisk  
Earthjustice  
1617 JFK Boulevard, Suite 1675  
Philadelphia, PA 19103



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Mark R. Overstreet

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JUL 26 2013

PUBLIC SERVICE  
COMMISSION

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

THE APPLICATION OF KENTUCKY POWER COMPANY FOR: )  
 (1) A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY )  
 AUTHORIZING THE TRANSFER TO THE COMPANY OF AN )  
 UNDIVIDED FIFTY PERCENT INTEREST IN THE MITCHELL )  
 GENERATING STATION AND ASSOCIATED ASSETS; (2) APPROVAL )  
 OF THE ASSUMPTION BY KENTUCKY POWER COMPANY OF )  
 CERTAIN LIABILITIES IN CONNECTION WITH THE TRANSFER OF )  
 THE MITCHELL GENERATING STATION; (3) DECLARATORY ) CASE NO. 2012-00578  
 RULINGS; (4) DEFERRAL OF COSTS INCURRED IN CONNECTION )  
 WITH THE COMPANY'S EFFORTS TO MEET FEDERAL CLEAN AIR )  
 ACT AND RELATED REQUIREMENTS; 5) FOR ALL OTHER )  
 REQUIRED APPROVALS AND RELIEF )

KENTUCKY POWER COMPANY RESPONSES TO  
COMMISSION STAFF'S POST HEARING DATA REQUESTS

July 26, 2013



VERIFICATION

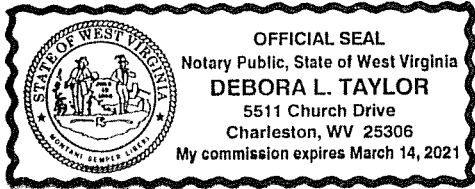
The undersigned, Jeffery D. LaFleur, being duly sworn, deposes and says he is Vice President Generating Assets APCO/KY, that he has personal knowledge of the matters set forth in the forgoing responses for which he is the identified witness and that the information contained therein is true and correct to the best of his information, knowledge, and belief

*Jeffery D. LaFleur*  
\_\_\_\_\_  
JEFFERY D. LAFLEUR

STATE OF WEST VIRGINIA )  
 ) Case No. 2012-00578  
COUNTY OF KANAWHA )

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Jeffrey D. LaFleur, this the 19<sup>th</sup> day of July 2013.

*Deborah L. Taylor*  
\_\_\_\_\_  
Notary Public



My Commission Expires: March 14, 2021

VERIFICATION

The undersigned, John M. McManus, being duly sworn, deposes and says he is Vice President Environmental Services for American Electric Power Service Corporation, that he has personal knowledge of the matters set forth in the forgoing responses for which he is the identified witness and that the information contained therein is true and correct to the best of his information, knowledge and belief.

*John M. McManus*  
John M. McManus

STATE OF OHIO )  
 ) CASE NO. 2012-00578  
COUNTY OF FRANKLIN )

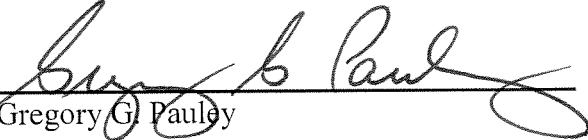
Subscribed and sworn to before me, a Notary Public in and before said County and State, by John M. McManus, this the 22 day of July 2013.

*Janet L. White*  
Notary Public

JANET L. WHITE  
Notary Public, State of Ohio  
My Commission Expires: My Commission Expires 09-09-2013

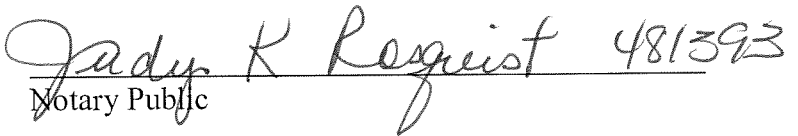
**VERIFICATION**

The undersigned, Gregory G. Pauley, being duly sworn, deposes and says he is the President and Chief Operating Officer for Kentucky Power Company, that he has personal knowledge of the matters set forth in the forgoing responses for which he is the identified witness and that the information contained therein is true and correct to the best of his information, knowledge and belief

  
\_\_\_\_\_  
Gregory G. Pauley

COMMONWEALTH OF KENTUCKY     )  
  ) CASE NO. 2012-00578  
COUNTY OF FRANKLIN             )

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Gregory G. Pauley, this the 25 day of July 2013.

  
\_\_\_\_\_  
Notary Public

My Commission Expires: January 23, 2017

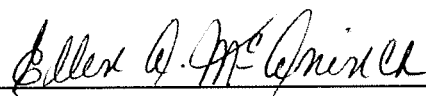
**VERIFICATION**

The undersigned, Scott C. Weaver, being duly sworn, deposes and says he is Managing Director Resource Planning and Operation Analysis for American Electric Power, that he has personal knowledge of the matters set forth in the forgoing responses for which he is the identified witness and that the information contained therein is true and correct to the best of his information, knowledge and belief

  
\_\_\_\_\_  
Scott C. Weaver

STATE OF OHIO )  
 ) CASE NO. 2012-00578  
COUNTY OF FRANKLIN )

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Scott C. Weaver, this the 23<sup>rd</sup> day of July 2013.

  
\_\_\_\_\_  
Notary Public

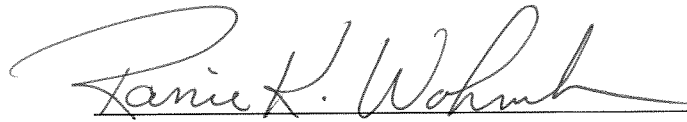
My Commission Expires: May 11<sup>th</sup>, 2016



ELLEN A. MCANINCH  
NOTARY PUBLIC  
STATE OF OHIO  
Recorded in  
Franklin County  
My Comm. Exp. 5/11/16

**VERIFICATION**

The undersigned, Ranie K. Wohnhas, being duly sworn, deposes and says he is the Managing Director Regulatory and Finance for Kentucky Power, that he has personal knowledge of the matters set forth in the forgoing responses for which he is the identified witness and that the information contained therein is true and correct to the best of his information, knowledge, and belief

  
\_\_\_\_\_  
Ranie K. Wohnhas

COMMONWEALTH OF KENTUCKY	)	
	)	CASE NO. 2013-00578
COUNTY OF FRANKLIN	)	

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Ranie K. Wohnhas, this the 26 day of July 2013.

  
\_\_\_\_\_  
Notary Public

My Commission Expires: January 23, 2017

**Kentucky Power Company**

**REQUEST**

Does the Mitchell Operating Agreement address a scenario where APCO obtains less than a 50% interest in the Mitchell Generating Station? If so, please identify how the Operating Agreement would address that scenario. If not, please identify how the Company would proceed.

**RESPONSE**

No, the Mitchell Operating agreement does not address a scenario where APCo obtains less than a 50% undivided interest in the Mitchell Units. While the transfers in each jurisdiction are independent of one other, anything less than the proposed 50% undivided interest in ownership would necessitate an amended Operating Agreement to be filed with the FERC. How the Operating Agreement may be revised would depend on the specifics of APCo's ownership interest.

**WITNESS:** Gregory G Pauley

**Kentucky Power Company**

**REQUEST**

Does the Mitchell Operating Agreement address a scenario where APCO obtains less than a 50% interest in the Mitchell Generating Station? If so, please identify how the Operating Agreement would address that scenario. If not, please identify how the Company would proceed.

**RESPONSE**

No, the Mitchell Operating agreement does not address a scenario where APCo obtains less than a 50% undivided interest in the Mitchell Units. While the transfers in each jurisdiction are independent of one other, anything less than the proposed 50% undivided interest in ownership would necessitate an amended Operating Agreement to be filed with the FERC. How the Operating Agreement may be revised would depend on the specifics of APCo's ownership interest.

**WITNESS:** Gregory G Pauley

## Kentucky Power Company

### REQUEST

Please clarify the testimony of Greg Pauley as to whether the term "Company" refers to Kentucky Power of AEP.

### RESPONSE

With a single exception, the stand-alone term Company was used by Mr. Pauley to denote Kentucky Power Company. The exception occurred in the following exchange between Mr. Howard and Mr. Pauley:

Q. Okay. So when the decision-making --- when the final decision was made to proceed with this application, and unfortunately I didn't keep a count of the numbers, there were two people from Kentucky Power that participated in the collaborative, and how many were there from other AEP companies? Five, six, seven, eight?

A. Well, I would say from the standpoint of the decision-making process, the people I listed to you were there from the decision-making, but we utilized the talents and expertise that we have throughout the Company, so there could have been a lot of people, but the decision-making ended up in the hands of those people there.

As used by Mr. Pauley in the above answer, the term "Company" included both American Electric Power Service Corporation and Kentucky Power Company.

WITNESS: Gregory G Pauley



**Kentucky Power Company**

**REQUEST**

Please update the amount of liability to be assumed by Kentucky Power upon completion of the Mitchell Transaction. These amounts are referenced in paragraphs 38 and 42 of the Company's application.

**RESPONSE**

As stated in the Kentucky Power's application the book value of the assumed liabilities will be fixed at the time of closing. The book value of assumed liabilities, excluding debt, as of March 31, 2013 was \$162 million. Because the 50% undivided interest in the Mitchell generating station will be transferred at net book value, an increase in the book value of the assumed liabilities will reduce the transfer net book value on a dollar for dollar basis.

**WITNESS:** Ranie K Wohnhas

**Kentucky Power Company**

**REQUEST**

Please identify the current retirement age for depreciation purposes of the Mitchell Generating Station.

**RESPONSE**

The estimated retirement date for the Mitchell Generating Station that is currently being used for depreciation purposes is 2031. This estimated retirement date is based on a depreciation study dated December 31, 2007 which does not reflect current operating assumptions.

**WITNESS:** Ranie K. Wohnhas

**Kentucky Power Company**

**REQUEST**

Please identify the Mitchell FGD costs that will be included in the Environmental Surcharge, as described in Paragraph 6 of the Settlement Agreement. (p. 91 – Wohnhas)

**RESPONSE**

The estimated Mitchell FGD costs to be included in the Environmental Surcharge as described in Paragraph 6 of the Settlement Agreement is shown on Attachment 1 to this response.

**WITNESS:** Ranie K Wohnhas

**ESTIMATED Mitchell FGD Costs**  
 Based on the 12 months ended 3/31/2013

	Total Mitchell	KPCo Share	KPCo KY Retail	
Mitchell FGD Plant in Service	\$ 517,178,575	\$ 258,589,287.54	\$ 254,710,448.23	PDAF
Accumulated Depreciation	\$ (109,721,993)	\$ (54,860,996.74)	\$ (54,038,081.79)	PDAF
ADFIT	\$ (94,570,289)	\$ (47,285,144.73)	\$ (46,575,867.56)	PDAF
Total Rate Base	\$ 314,706,267	\$ 157,353,133	\$ 154,993,746	
Return on Rate Base @ 8.08% WACC			\$ 12,523,495	
FGD Depreciation Expense	\$ 20,099,938	\$ 10,049,968.90	\$ 9,899,219	PDAF
Scrubber Chemical Expense	\$ 12,955,810	\$ 6,477,905	\$ 6,387,214	Energy
Gypsum Disposal and Handling Net of Sales Proceeds	\$ 1,603,988	\$ 801,994	\$ 790,766	Energy

## Kentucky Power Company

### REQUEST

Please identify the revenue difference for 2012 if the provisions set forth in Paragraph 15 of the Settlement Agreement would have been in effect. (p. 94-95- Wohnhas)

### RESPONSE

#### Introduction.

Paragraph 15 of the Stipulation and Settlement Agreement consists of two independent provisions that will operate during separate time periods. The first provision (“Big Sandy Provision”) will be in effect from January 1, 2014 until the retirement of Big Sandy Unit 2. That is, it will be effective during the period both Big Sandy Unit 2 and the Mitchell generating station are anticipated to be operating. The Big Sandy Provision provides that no forced outage of Big Sandy Unit 2 will be treated as a forced outage for purposes of the fuel adjustment clause. The effect of not treating a forced outage of Big Sandy Unit 2 as a forced outage is to permit the Company to recover the difference, *if any*, between the assigned Big Sandy Unit 2 fuel cost and the identifiable fuel cost of the substitute generation where the identifiable fuel cost of the substitute generation is greater than the assigned Big Sandy Unit 2 fuel cost through the fuel adjustment clause. The Big Sandy Provision is applicable only to forced outages of Big Sandy Unit 2. Application of the fuel adjustment clause to a forced outage of the two Mitchell units will be unaffected by the Big Sandy Provision.

Following the retirement of Big Sandy Unit 2, the second provision of Paragraph 15 (“Post-Big Sandy Provision”) will become effective. It will apply to the Company’s fifty percent undivided interest in the Mitchell generating station or any other Kentucky Power plants. In the event of the forced outage of one or both of the Mitchell units, the Company will recover through the fuel adjustment clause the lesser of the fuel costs of the substitute generation or the fuel costs assigned to the units. In addition, the Company will be entitled to recover through the Purchase Power Adjustment the fuel costs of the substitute generation not recovered through the fuel adjustment clause, if any, plus any other incremental purchased power costs resulting from the forced outage.

Both parts of Paragraph 15 of the Stipulation and Settlement Agreement are intended to provide Kentucky Power with risk mitigation to protect against having to go to market for

substitute generation following the January 1, 2014 termination of the AEP-East Pool Agreement. Prior to the termination of the Pool Agreement, the Company relied upon, the typically inexpensive energy purchases from the Pool when the Company was required to procure substitute energy as a result of a forced outage. Because the fuel associated with these Pool purchases was normally at or below the assigned cost of Kentucky Power units that were forced out, the Company was able to recover its fuel costs in full through the fuel adjustment clause. With the termination of the Pool Agreement, the Company will no longer be able to purchase energy from the Pool, and instead may be required to obtain substitute energy from the market in the case of a forced outage.

Because the Company will have both Big Sandy Unit 2 and the fifty percent undivided interest in the two Mitchell units available to it during the period the Big Sandy Provision is effective, the parties to the Stipulation and Settlement Agreement agreed to limit the risk mitigation available to Kentucky Power to Big Sandy Unit 2 only, and to further limit the recovery under Paragraph 15 to the difference, if any, between the fuel cost assigned to Big Sandy Unit 2 and any higher fuel costs associated with the substitute generation. The Big Sandy Provision also is limited to forced outages of Big Sandy Unit 2 in recognition of the fact that as Big Sandy Unit 2 approaches its anticipated 2015 retirement, it may not be economically prudent to make further investments in the unit to extend its continued operation until May 31, 2015.

Once Big Sandy Unit 2 is retired, or can no longer economically operate, the Post-Big Sandy Provision will become effective. Without the capacity of both Big Sandy Unit 2 and the two Mitchell Units available to Kentucky Power, and with the January 1, 2014 termination of the Pool Agreement, the Post-Big Sandy Provision recognizes that it is fair and reasonable to permit the Company to recover not only the difference between the assigned cost of the forced-out Mitchell generation and any higher identifiable fuel cost of the substitute generation, but also to recover any other incremental costs of the energy purchased during the forced outage. Further, it is important to note that because the Post-Big Sandy Provision will most likely become effective coincident with the effective date of the new base rates to be established in the Base Rate Case the Company is required to file under the Stipulation and Settlement Agreement, the incremental costs to be recovered through the Purchase Power Adjustment will no longer be recovered through base rates. As such, the Post-Big Sandy Provision allows Kentucky Power to match the incremental costs, if any, to their recovery, to the benefit of both the Company and its customers. That is, there is no over-recovery or under-recovery.

In summary, Paragraph 15 is negotiated risk mitigation the Company obtained to address the increased likelihood in the absence of the AEP-East Pool, and the corresponding elimination of the pool capacity payments Kentucky Power made as a deficit member, that the Company may have to obtain substitute energy from the volatile market. This risk mitigation was obtained in return for the many concessions and customer benefits the Company gave during the extensive negotiations leading to the Stipulation and Settlement Agreement. It is intended to make the Company whole – but nothing more than whole – in the event it is required to make market purchases in the case of a forced outage following the termination of the Pool Agreement.

**Operation of the Big Sandy Provision Using Historical Data.**

There were no forced outages of Big Sandy Unit 2 in 2012; thus the revenue collected by Kentucky Power in 2012 through the fuel adjustment clause would have been the same as actually collected under 807 KAR 5:056 even if paragraph 15 of the Stipulation and Settlement had been in effect in 2012.

In an effort to address the substance of the Vice-Chairman's inquiry, the Company performed the requested analysis using 2011 forced outages of Big Sandy Unit 2. During 2011, there were eight forced outages of Big Sandy Unit 2 covering seven months. For each such forced outage, the cost of fuel for the generation that was substituted during the forced outage **did not exceed** the assigned cost of fuel during the forced outage. Thus, the revenue collected under the fuel adjustment clause would have been the same without regard to whether the Big Sandy Provision of paragraph 15 of the Stipulation and Settlement Agreement had been effective in 2011.

**Operation of the Post-Big Sandy Provision Using Historical Data.**

Although the Post-Sandy Provision is not intended to apply until Big Sandy Unit 2 is retired, Kentucky Power is using 2011 Big Sandy Unit 2 data as the proxy for the same data for the Company's fifty percent interest in Mitchell Units 1 and 2 because the Big Sandy data is more readily available. The Post-Big Sandy Provision will have no effect on the operation of the fuel adjustment clause. Instead, the incremental purchased power costs will be recovered through the Purchase Power Adjustment. These incremental costs, using 2011 data for Big Sandy Unit 2, were:

Month of Forced Outage	Incremental Costs
March 2011	\$ 313,029.00
April 2011	\$ 415,315.00
May 2011	\$ 279,486.63
June 2011	\$ 18,564.00
September 2011	\$ 259,565.09
October 2011	\$ 282,479.91
November 2011	\$ 405,088.20

**WITNESS:** Ranie K Wohnhas



**Kentucky Power Company**

**REQUEST**

Please provide the estimated Big Sandy demolition costs included in the June 28, 2013 base rate case filing. (pp. 105-106 – Wohnhas)

**RESPONSE**

Please see KPSC PH-7 Attachment 1 for the requested information.

**WITNESS:** Ranie K Wohnhas

KENTUCKY POWER COMPANY  
 2012 DEPRECIATION STUDY  
 CALCULATION OF NET SALVAGE RATIO AT RETIREMENT DATE

Plant/Units	Terminal Salvage at Retirement Date	Interim Salvage Amount	Total Salvage Amount	Terminal Removal at Retirement Date	Interim Removal Amount	Total Removal Amount	Original Cost at Dec. 2012	Salvage as a % of Original Cost	Removal as a % of Original Cost	Net Salvage Percent	Net Salvage Ratio
Big Sandy Plant	\$21,944,522	\$0	\$21,944,522	\$107,171,725	\$7,193,369	\$114,365,094	\$546,782,126	4.01%	20.92%	-16.91%	1.17
Mitchell Plant (A)	<u>\$37,070,302</u>	<u>\$3,878,013</u>	<u>\$40,948,315</u>	<u>\$87,693,956</u>	<u>\$7,193,369</u>	<u>\$94,887,325</u>	<u>\$868,016,733</u>	4.72%	10.93%	-6.21%	1.06
Total Generation Plant	<u>\$59,014,824</u>	<u>\$3,878,013</u>	<u>\$62,892,837</u>	<u>\$194,865,681</u>	<u>\$14,386,738</u>	<u>\$209,252,419</u>	<u>\$1,414,798,859</u>				

(A) Kentucky's share at 50%.

KENTUCKY POWER COMPANY  
2012 DEPRECIATION STUDY  
CALCULATION OF TERMINAL SALVAGE AND REMOVAL AT RETIREMENT DATE  
USING SARGENT & LUNDY STUDY DATA AND CONSUMER'S PRICE INDEX

Plant/Units	Terminal Salvage	Terminal Removal	Terminal Net Salvage	Average Inflation Rate (1)	Plant Retirement Year	Years Until Plant Retirement	Terminal Salvage at Retirement Date	Terminal Removal at Retirement Date	Terminal Net Salvage at Retirement Date
<u>Big Sandy Plant</u>									
S&L Estimate	\$20,887,112	\$49,718,898	(\$28,831,786)	2.50%	2015	2	\$21,944,522	\$52,235,917	(\$30,291,395)
Asbestos Cost	\$0	\$7,735,808	(\$7,735,808)				\$0	\$7,735,808	(\$7,735,808)
Ash Pond Closure	\$0	\$47,200,000	(\$47,200,000)				\$0	\$47,200,000	(\$47,200,000)
Total Big Sandy Plant	\$20,887,112	\$104,654,706	(\$83,767,594)				\$21,944,522	\$107,171,725	(\$85,227,203)
<u>Mitchell Plant</u>									
S&L Estimate	\$19,031,883	\$40,217,580	(\$21,185,697)	2.50%	2040	27	\$37,070,302	\$78,335,803	(\$41,265,501)
Ash Pond & Abestos Cost	\$0	\$9,358,153	(\$9,358,153)				\$0	\$9,358,153	(\$9,358,153)
Total Mitchell Plant	\$19,031,883	\$49,575,733	(\$30,543,850)				\$37,070,302	\$87,693,956	(\$50,623,654)
<b>TOTALS</b>	<b>\$39,918,995</b>	<b>\$154,230,439</b>	<b>(\$114,311,444)</b>				<b>\$59,014,824</b>	<b>\$194,865,681</b>	<b>(\$135,850,857)</b>

Note (1) Source Livingston Survey dated December 2012 (survey performed by Federal Reserve Bank of Philadelphia)

## Kentucky Power Company

### REQUEST

Please identify the potential penalties and fines arising from a hypothetical decision by the Company to operate Big Sandy Unit 2 without a retrofit beyond the MATS compliance date. (p. 55 – McManus)

### RESPONSE

The Company's core values emphasize that no aspect of operations is more important than the health and safety of people, and that we strive to meet our customers' needs in harmony with environmental protection. We strive to comply with all applicable environmental requirements, and recognize that even unintentional noncompliance can result in the imposition of fines and penalties. Knowing or intentional violations could result in criminal prosecution, would substantially damage the Company's reputation, and are inconsistent with those core values.

As a result, the Company would not operate in noncompliance, but would explore every avenue to assure that our operations comply with our legal obligations. In the event an unintentional violation of the Consent Decree occurred, there are stipulated penalties that would be due upon demand from EPA. These are listed in Section XIII of the Consent Decree, and include the following amounts for failure to install and continuously operate specific controls or retire a unit by the date listed in the Consent Decree:

- \$10,000/day per violation for the first 30 days
- \$32,500/day per violation on day 31 and thereafter

AEP is required to provide notice of any deviation from the Consent Decree requirements within 15 days. In response to such a notice, the United States may demand the payment of stipulated penalties. Stipulated penalties are due within 30 days of receipt of a written demand by the United States, unless AEP disputes the accrual of stipulated penalties by making a filing with the court. Penalties may continue to accrue during the court's resolution of a dispute between the parties.

The Clean Air Act itself also contains provisions that authorize the issuance of injunctions and/or the collection of civil penalties through an enforcement action in federal court for violations of specific emissions limitations or other standards imposed under certain provisions of the Act, including Section 112(d), the section under which EPA adopted the MATS rule. Penalties can be assessed separately for each violation (i.e., one penalty for a violation of the mercury limitation, one for a violation of the acid gas limitation, etc.) and can be assessed for each day that the violation continues.

The penalties available under this section are periodically adjusted for inflation, and for any violation of the Clean Air Act occurring after January 1, 2009, the maximum inflation-adjusted civil penalty amount is \$37,500 per day, per violation. These amounts are codified in the Code of Federal Regulations at 40 CFR 19.4, Table 1. In assessing a penalty under this section, the courts are directed to consider, among other things, the size of the business, the economic impact on the business of the penalty, the violator's full compliance history and good faith efforts to comply, the duration of the violation, any penalties previously assessed for the same violation, the economic benefit of non-compliance, and the seriousness of the violation.

WITNESS: John M McManus

**Kentucky Power Company**

**REQUEST**

Please provide the heat rate for the Glen Lynn Plant (p. 146 – LaFleur).

**RESPONSE**

Please see KPSC PH-9 Attachment 1\_CONFIDENTIAL to this response.

**WITNESS:** Jeffery D LaFleur

Glen Lyn Unit 5

	2008	2009	2010	2011	2012
Actual Heat Rate (BTU/KWH)	[REDACTED]				

## Kentucky Power Company

### REQUEST

Please provide a list of non-AEP plants that are fully compliant with retirement ages in the 60s and their capacity factors.

### RESPONSE

Based on publicly available information, the Company understands the following non-AEP super-critical plants<sup>4</sup> are currently SO<sub>2</sub> and NO<sub>x</sub> compliant and will be retired at an age of 60 years or later. However, based on publicly available information, the Company is unsure whether these units will be fully compliant with the MATS Rule.

#### Ameren Missouri<sup>1</sup>

Sioux Generation Station Unit 1 (In-Service 1967); Capacity Factor (2012 YTD)<sup>3</sup> – 55.6%

Sioux Generation Station Unit 2 (In-Service 1968); Capacity Factor (2012 YTD)<sup>3</sup> – 57.3%

#### Detroit Edison<sup>2</sup>

Monroe Generation Station Unit 3 (In-Service 1973); Capacity Factor (2012 YTD)<sup>3</sup> – 68.4%

Monroe Generation Station Unit 4 (In-Service 1974); Capacity Factor (2012 YTD)<sup>3</sup> – 46.4%

#### Sources:

1. Missouri Public Service Commission Docket ER-2010-0036
2. Michigan Public Service Commission Case No. U-16117
3. SNL Financial
4. <http://www.eia.gov/pub/electricity/f860y10.zip>

WITNESS: Jeffery D LaFleur



**Kentucky Power Company**

**REQUEST**

Please identify the depreciation study retirement dates for Amos Units 1 and 2 (the 800 MW units).

**RESPONSE**

Appalachian Power Company is currently using a 2032 retirement date for Amos Units 1 and 2 based on a depreciation study as of December 31, 2010 filed in Virginia Case No. PUE 2011-00037.

**WITNESS:** Jeffery D LaFleur

**Kentucky Power Company**

**REQUEST**

Please provide forecasted fundamental pricing used in the Strategist modeling runs.

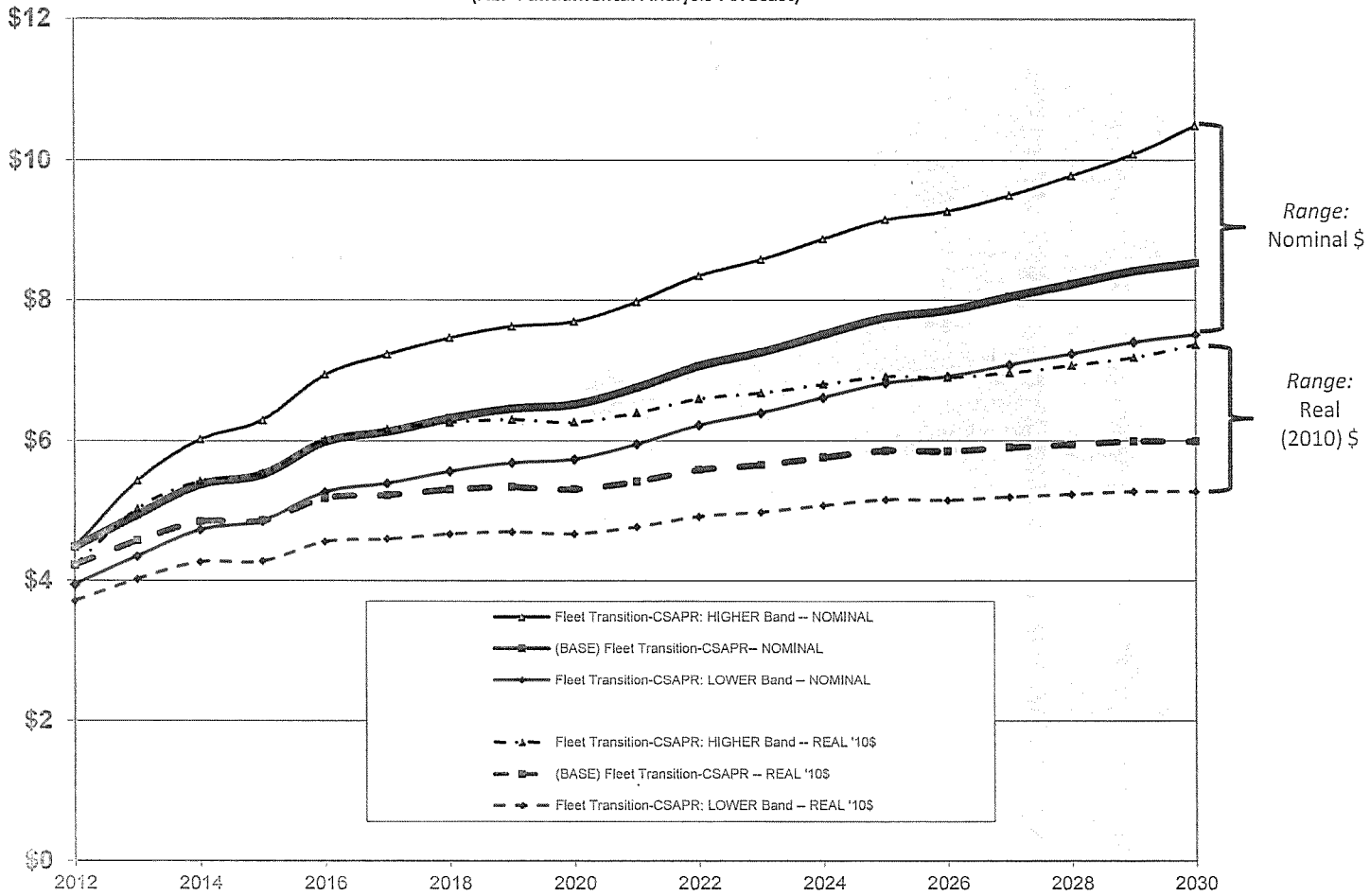
**RESPONSE**

Please refer to Company Witness Weaver Direct testimony, Exhibit SCW-3, reproduced as KPSC PH-12 Attachment 1.

**WITNESS:** Scott C. Weaver

# Natural Gas Prices (@ Henry Hub... per MMBtu)

Projected Price "Banding"  
(AEP Fundamental Analysis Forecast)





**Kentucky Power Company**

**REQUEST**

Please provide an estimate of the net book value of a 50% interest in the Mitchell Generating Station for the next ten years. (p. 199 – Weaver)

**RESPONSE**

Please see KPSC PH-13 Attachment 1 for the requested information.

**WITNESS:** Ranie K Wohnhas

Year End Forecasted Net Book Value- 50% of Mitchell - Total Company  
Dollars in Millions

Description	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Utility Plant and Construction Work in Progress	969.3	1,009.7	1,039.1	1,053.7	1,077.0	1,108.5	1,147.8	1,164.3	1,212.9	1,261.4
Accum Prov for Depreciation & Depletion - Utility	(313.7)	(350.3)	(390.5)	(433.2)	(476.8)	(521.4)	(567.5)	(614.7)	(663.3)	(713.8)
Fuel Stock	23.5	23.5	24.2	25.4	27.0	27.6	28.3	29.0	29.9	30.9
Plant Materials and Operating Supplies	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7
Other	(2.6)	(3.0)	(2.0)	(2.4)	(2.9)	(3.4)	(3.9)	(2.6)	(3.1)	(3.1)
Accumulated Deferred Income Tax	(159.3)	(138.2)	(132.7)	(125.6)	(118.2)	(111.1)	(111.0)	(104.4)	(105.2)	(109.0)
Total	535.9	560.4	556.9	536.6	524.9	519.0	512.4	490.3	490.0	485.1

## Kentucky Power Company

### REQUEST

"Please evaluate the CPW cost of a resource planning alternative that includes a new construction, natural gas combine cycle facility at the Big Sandy site with an in-service date of 2017 (as a replacement for Big Sandy Unit 2) and the proposed natural gas fuel conversion of Big Sandy Unit 1 effective 2015. Please also provide a summary of the major assumptions utilized in that additional evaluation."

### RESPONSE

The requested evaluation is shown as Option 2C on KPSC PH-14 Attachment 1 to this Data Request Response. As shown in KPSC PH-14 Attachment 1, "Option 2C" is \$560 million more expensive on a CPW basis --under current "BASE" long-term fundamental pricing-- over the 30-year study period (i.e., through 2040) *versus* the Company's proposed lowest-cost alternative Option #5A which calls for the 50% Mitchell 1 and 2 transfer plus the conversion of Big Sandy Unit 1 to natural gas. Indeed, it is more expensive than five other options (none of which involved the retrofit of Big Sandy Unit 2 with a scrubber) in addition to Option 5A.

As explained in KPSC PH-14 Attachment 2 to this Response, the natural gas prices utilized by the Company in performing the evaluation of Option 2C are, as requested by the Commission, the most current long-term natural gas price forecasts used by the Company. Nevertheless, and in an effort to test the effect lower than anticipated natural gas prices would have on the relative economics of the Company's recommended alternative, Option 5A, versus the other alternatives studied, including Option 2C, Attachment 1 also offers an additional analysis which incorporated a plausible, but less probable "LOWER Band" long-term fundamental pricing. These LOWER Band natural gas prices are approximately 12% lower across the study period than the BASE natural gas prices, and as such, would tend to favor a heavier natural gas-based solution like Option 2C. Even under this lower natural gas pricing, Option 2C continued to be \$377 million more expensive than the Company's Option #5A. In fact, Option 5A remained the least cost alternative under LOWER Band pricing by \$181 million to \$737 million on a CPW basis. (The two Big Sandy retrofit options were \$640 million and \$737 million more expensive than Option 5A the Company's recommended alternative, under the LOWER Band pricing. This again suggests that the proposed Option 5A would continue to offer significant relative benefits to Kentucky Power customers even under lower-than-anticipated natural gas pricing projections.

The Company also added a second sensitivity to its evaluation of Option 2C to further “stress” the comparative economics of its recommended Option 5A. Although the Mitchell generating station was rightfully described by Mr. LaFleur as the “crown jewel” of the AEP fleet, and a plant expected to run through at least the end of the study period (2040), the Company evaluated the effect that retiring Mitchell five years earlier than the end of the study period would have on the relative economics of the Company’s recommended alternative, Option 5A. As illustrated in KPSC PH-14 Attachment 3 to this Response, Option 5A remains the least cost alternative. It is \$258 million less expensive on a CPW basis than the next least cost alternative, Option 5B, and \$438 million less expensive than Option 2C. It also is \$483 million and \$697 million less expensive than either of the Big Sandy retrofit options.

KPSC PH-14 Attachment 2 offers a summary of the major assumptions utilized.

Supporting calculations for this analysis can be found on the enclosed CD.

**WITNESS:** Scott C Weaver



**MODIFIED TO INCORPORATE A NEW KPSC-REQUESTED BIG SANDY DISPOSITION OPTION ("OPTION #2C")**

**COMPARATIVE** Cumulative Present Worth (CPW) of Relative KPCo "G" Revenue Requirements (2011 \$)

ADJUSTED TO REFLECT REDUCED CAPACITY VALUE ATTRIBUTABLE TO "MITCHELL TRANSFER" OPTIONS (for 1/2014 thru 5/2015 only)

(COST / <SAVINGS> )

Option #1		Option #2		Option #2C	Option #3		Option #4		Option #5	
RETROFIT Big Sandy Unit 2; RETIRE & REPLACE Big Sandy Unit 1 (6/2015) Retrofit BS2 with Dry (NID) FGD Technology (6/2017)		RETIRE & REPLACE Big Sandy Units 1 and 2 (6/2015 & 1/2016, respectively) Replace BS2 with "Brownfield New-Build" NG-Combined Cycle (@ Big Sandy site) (7/2017)		RETIRE Big Sandy 2 (1/2016) Replace BS2 w/ "Brownfield" New-Build NG-Combined Cycle (7/2017)... and Convert Big Sandy Unit 1 to Burn Natural Gas (7/2015)	RETIRE & REPLACE Big Sandy Unit 2 (1/2016) "CC-Repowered" Big Sandy Unit 1 (7/2017)		RETIRE & REPLACE Big Sandy Units 1 and 2 (6/2015) Replace with Purchased Capacity & Energy		RETIRE & REPLACE Big Sandy Unit 2 (1/2016) "Gas-Convert" Big Sandy Unit 1 (7/2015)	
Option #1A	Option #1B	Option #2A	Option #2B		Option #3A	Option #3B	Option #4A	Option #4B	Option #5A	Option #5B
Remaining Capacity from 20% (312-MW) Mitchell Asset Transfer (1/2014)	Remaining Capacity from (PJM) Market Purchases for 10-ys, then new-build CC or CT(s)	Remaining Capacity from 20% (312-MW) Mitchell Asset Transfer (1/2014)	Remaining Capacity from (PJM) Market Purchases for 10-ys, then new-build CC or CT(s)		Remaining Capacity from 20% (312-MW) Mitchell Asset Transfer (1/2014)	Remaining Capacity from (PJM) Market Purchases for 10-ys, then new-build CC or CT(s)	Capacity from (PJM) Market Purchases for 5-ys, then ~700-800 MW CC and/or CT-build	Capacity from (PJM) Market Purchases for 10-ys, then ~700-800 MW CC and/or CT-build	Capacity from 50% (780-MW) Mitchell Asset Transfer (1/2014)	Capacity from (PJM) Market Purchases for 5-ys, then New-Build CC and/or CTs

all versus...

\$ Millions

("BASE") Option #6: RETIRE & REPLACE Big Sandy 1 and 2 (6/2015) with 50% (780-MW) Mitchell Units Ownership Transfer (1/2014) plus (PJM) Market Purchases (for 10-ys)

BASE: "Fleet Transition-CSAPR"	469	663	327	526	404	402	598	376	401	(156)	223
% Relative Variance	8.1%	11.4%	5.6%	9.0%	6.9%	6.9%	10.3%	6.5%	6.9%	-2.7%	3.8%

'Commodity Price Banding' Scenarios...

2. "Fleet Transition-CSAPR: HIGHER Band"	442	810	533	899	Not Analyzed	615	982	781	869	(149)	639
3. "Fleet Transition-CSAPR: LOWER Band"	486	583	232	338	223	303	406	186	183	(154)	27

'Carbon/CO<sub>2</sub> Pricing' Scenarios...

4. "Fleet Transition-CSAPR: No Carbon"	462	692	382	617	Not Analyzed	457	688	464	502	(168)	307
5. "Fleet Transition-CSAPR: Early Carbon (2017)"	472	626	276	438	Not Analyzed	350	509	299	311	(144)	149

all versus...

\$ Millions

("LEAST-COST") Option #5A: RETIRE & REPLACE Big Sandy 2 (6/2015) with 50% (780-MW) Mitchell Units Ownership Transfer (1/2014) plus Big Sandy 1 Gas Conversion (7/2015)

BASE: "Fleet Transition-CSAPR"	626	819	483	682	560	559	755	533	557		380
% Relative Variance	11.0%	14.5%	8.5%	12.0%	9.9%	9.9%	13.3%	9.4%	9.8%		6.7%
3. "Fleet Transition-CSAPR: LOWER Band"	640	737	386	492	377	457	560	340	337		181

Kentucky Power Company – Big Sandy Unit Disposition Options  
**"BASE" ('Fleet Transition-CSAPR') Commodity Pricing**  
 30-Year Study Period Summary and Costs

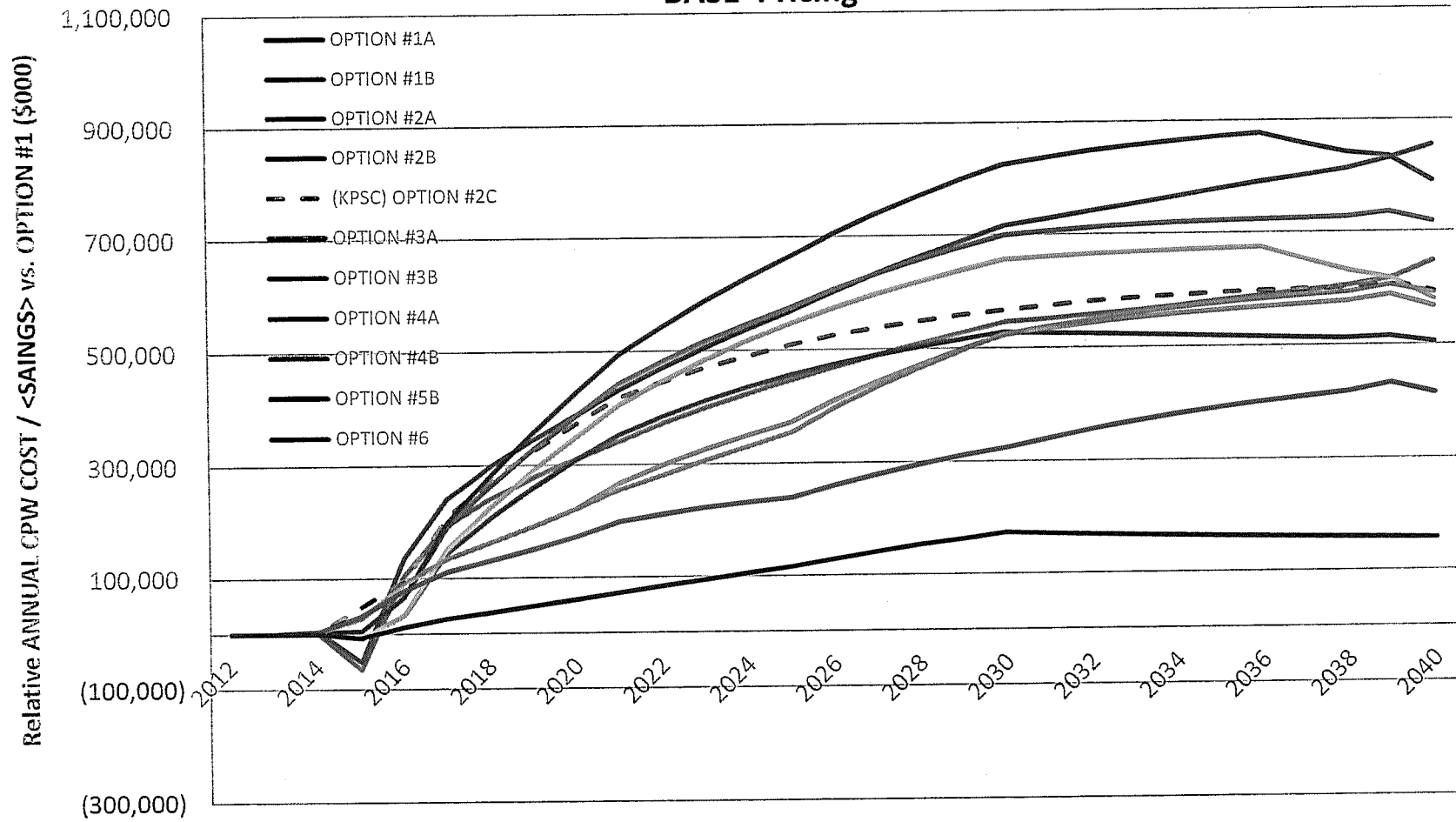
**Expanded to Include KPSC-Requested Option ("#2C")**

Option	#1A	#1B	#2A	#2B	#2C (NEW)	#3A	#3B	#4A	#4B	#5A	#5B	#6
Big Sandy 1 Disposition	Retire 6/2015		Retire 6/2015		Gas Conv 7/2015	(CC) Repower 6/2017		Retire 6/2015		Gas Conversion 7/2015		Retire 6/2015
Big Sandy 2 Disposition	Retrofit 6/2017 (Idling 1/2016)		Retire 1/2016			Retire 1/2016		Retire 6/2015		Retire 6/2015		Retire 6/2015
Mitchell 1&2 Transfer (1/2014)	20%   0%		20%   0%		0%	20%   0%		0%   0%		50%   0%		50%
BS Repl-Build Capacity at Big Sandy Site	None	None (thru 2025)	None	None (thru 2025)	None (thru 2025)	(Repowered) Combined-Cycle (6/17)		None (thru 2025)	None (thru 2025)	None (thru 2030)	None (thru 2020)	None (thru 2025)
BS Repl-Build Capacity at Generic Site	None	None (thru 2025)	None	None (thru 2025)	None (thru 2025)	None	None (thru 2025)	None (thru 2020)	None (thru 2025)	None	None (thru 2025)	None
Market Purchase Duration	None	To '26 (~250 MW)	None	To '26 (~250 MW)	None	None	To '26 (~250 MW)	To '21 (~1050 MW)	To '26 (~1050 MW)	None	To '21 (~800 MW)	To '26 (~250 MW)
2011												
2012												
2013												
2014	2- 20% ML		2- 20% ML			2- 20% ML				2- 50% ML		2- 50% ML
2015					1- 260 MW BSGAS					260 MW BSGAS	260 MW BSGAS	
2016												
2017	-788 MW Retrofit	-788 MW Retrofit	1- 762 MW BFCC	1- 762 MW BFCC	1- 762 MW BFCC	1- 745 MW RPWR	1- 745 MW RPWR					
2018												
2019												
2020												
2021								4-85 MW CT's, 1- 352 MW CC1			1- 381 MW BFCC	
2022												
2023												
2024												
2025												
2026		4-85 MW CT's		4-85 MW CT's			4-85 MW CT's	1- 381 MW BFCC	4-85 MW CT's, 1- 762 MW BFCC		4-85 MW CT's	1- 381 MW BFCC
2027												
2028												
2029												
2030										1- 381 MW BFCC	1- 352 MW CC1	
2031					4-85 MW CT's							
2032-2040												
<u>2011- 2040 CPW (\$000)</u>												
KPCO Production and Capital Cost	6,256,539	6,322,529	6,214,342	6,286,130	6,226,894	6,209,935	6,278,564	5,972,503	5,815,008	5,680,947	5,855,373	5,752,470
Less: Value of ICAP Revenue	<u>(20,560)</u>	<u>(161,628)</u>	<u>79,997</u>	<u>(61,071)</u>	<u>1,514</u>	<u>(205)</u>	<u>(141,273)</u>	<u>(225,245)</u>	<u>(406,986)</u>	<u>50,313</u>	<u>(189,484)</u>	<u>(34,601)</u>
Total KPCO Revenue Requirement, Net	6,277,099	6,484,157	6,134,344	6,347,201	6,225,379	6,210,140	6,419,837	6,197,747	6,221,994	5,630,634	6,044,857	5,787,072
PLUS:												
Post-Modeling Adj. to reflect Reduced Capacity Value												
Attributable to Mitchell Options (1/2014-5/2015)	<u>13,767</u>	-	<u>13,767</u>	-	-	<u>13,767</u>	-	-	-	<u>34,418</u>	-	<u>34,418</u>
ADJ. Total KPCO Revenue Requirement, Net	6,290,866	6,484,157	6,148,111	6,347,201	6,225,379	6,223,907	6,419,837	6,197,747	6,221,994	5,665,052	6,044,857	5,821,490
<b>Cost/ &lt;Savings&gt; vs. "Option #6"</b>	<b>469,376</b>	<b>662,667</b>	<b>326,622</b>	<b>525,711</b>	<b>403,890</b>	<b>402,417</b>	<b>598,347</b>	<b>376,258</b>	<b>400,504</b>	<b>(156,437)</b>	<b>223,368</b>	<b>-</b>
(Per Weaver Exhibit SCW-1R and Rebuttal "TABLE 1R")	8.1%	11.4%	5.6%	9.0%	6.9%	6.9%	10.3%	6.5%	6.9%	-2.7%	3.8%	
<b>Cost/ &lt;Savings&gt; vs. (Least-Cost) "Option #5A"</b>	<b>625,813</b>	<b>819,105</b>	<b>483,059</b>	<b>682,148</b>	<b>560,327</b>	<b>558,854</b>	<b>754,784</b>	<b>532,695</b>	<b>556,941</b>	<b>-</b>	<b>379,805</b>	<b>156,437</b>
(Per Weaver Rebuttal "TABLE 1R")	11.0%	14.5%	8.5%	12.0%	9.9%	9.9%	13.3%	9.4%	9.8%		6.7%	2.8%

**Kentucky Power Company**  
 Big Sandy Unit Disposition Options  
**ANNUAL CPW Cost/<Savings>**

*versus*  
 Retire BS2, Replace w/ 50% of Mitchell 1&2 + BS1 Gas Conversion  
 ("Least-Cost" OPTION #5A) (Excl. Capacity Value Adj re ML)

**BASE Pricing**



Kentucky Power Company – Big Sandy Unit Disposition Options

**"LOWER Band" Commodity Pricing**  
30-Year Plan Summary and Costs

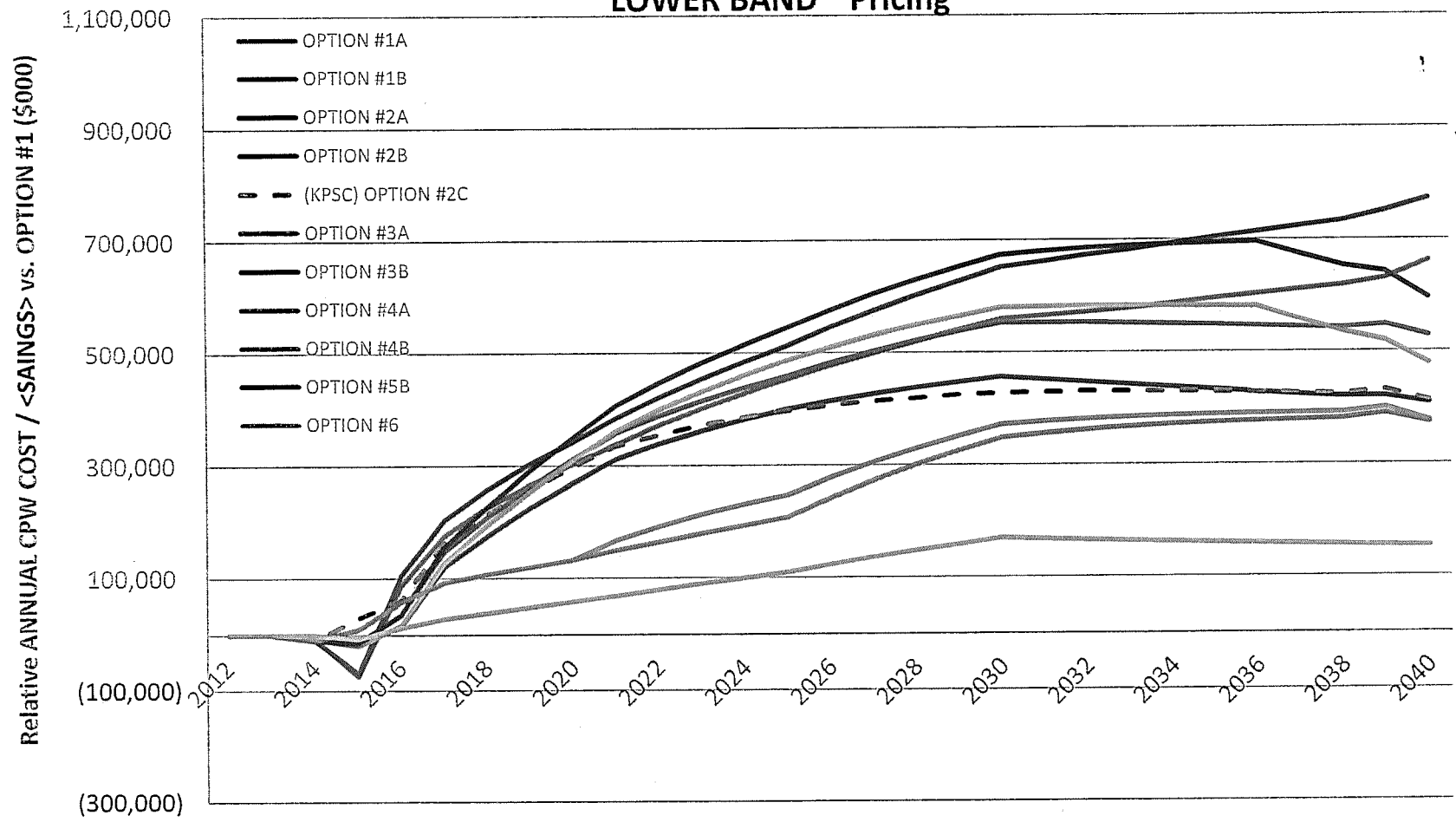
Expanded to Include KPSC-Requested Option ("#2C")

Option	#1A	#1B	#2A	#2B	#2C (NEW)	#3A	#3B	#4A	#4B	#5A	#5B	#6
	Retire 6/2015		Retire 6/2015		Gas Conv 7/2015	(CC) Repower 6/2017		Retire 6/2015		Gas Conversion 7/2015		Retire 6/2015
	Retrofit 6/2017 (Idling 1/2016)		Retire 1/2016			Retire 1/2016		Retire 6/2015		Retire 6/2015		Retire 6/2015
	20%	0%	20%	0%	0%	20%	0%	0%	0%	50%	0%	50%
	Combined-Cycle (6/2017)					(Repowered) Combined-Cycle (6/2017)		None (thru 2025)	None (thru 2025)	None (thru 2030)	None (thru 2020)	None (thru 2025)
	None	None (thru 2025)	None	None (thru 2025)	None (thru 2025)	None	None (thru 2025)	None (thru 2020)	To '25(-1050 MW)	None	To '21(-800 MW)	To '26 (-250 MW)
Market Purchase Duration	None	To '26 (-250 MW)	None	To '26 (-250 MW)	None	None	To '26 (-250 MW)	To '21(-1050 MW)	To '25(-1050 MW)	None	To '21(-800 MW)	To '26 (-250 MW)
2011												
2012												
2013												
2014	2- 20% ML,		2- 20% ML,			2- 20% ML,				2- 50% ML,		2- 50% ML,
2015					1- 260 MW BSGAS,					- 260 MW BSGAS,		
2016												
2017	1-788 MW Retrofit,	1-788 MW Retrofit,	1- 762 MW BFCC,	1- 762 MW BFCC,	1- 762 MW BFCC,	1- 745 MW RPWR,	1- 745 MW RPWR,					
2018												
2019												
2020								4- 85 MW CT's,			1- 381 MW BFCC,	
2021								1- 352 MW CC1,				
2022												
2023												
2024												
2025												
2026		4- 85 MW CT's,		4- 85 MW CT's,			4- 85 MW CT's,	1- 381 MW BFCC,	1- 762 MW BFCC,		4- 85 MW CT's,	1- 381 MW BFCC,
2027												
2028												
2029												
2030												
2031										1- 381 MW BFCC,	1- 352 MW CC1,	
2032-2040												
<b>2011- 2040 CPW (\$000)</b>												
KPCO Production and Capital Cost	6,190,321	6,172,346	6,027,448	6,018,345	5,955,266	6,026,169	6,013,930	5,718,627	5,556,551	5,602,371	5,592,636	5,680,225
Less: Value of ICAP Revenue	(25,305)	(154,304)	55,588	(63,410)	(11,236)	(6,900)	(135,699)	(211,507)	(370,124)	46,899	(178,634)	(29,216)
Total KPCO Revenue Requirement, Net	6,215,627	6,326,650	5,961,859	6,081,755	5,966,502	6,033,069	6,149,828	5,930,134	5,926,675	5,555,471	5,771,270	5,709,441
PLUS:												
Post-Modeling Adj. to reflect Reduced Capacity Value Attributable to Mitchell Options (1/2014-5/2015)	13,767	-	13,767	-	-	13,767	-	-	-	34,418	-	34,418
ADJ. Total KPCO Revenue Requirement, Net	6,229,394	6,326,650	5,975,626	6,081,755	5,966,502	6,046,836	6,149,828	5,930,134	5,926,675	5,589,889	5,771,270	5,743,859
<b>Cost / &lt;Savings&gt; vs. "Option #6"</b> (Per Weaver Exhibit SCW-1R)	<b>485,535</b> 8.5%	<b>582,791</b> 10.1%	<b>231,768</b> 4.0%	<b>337,897</b> 5.9%	<b>222,643</b> 3.9%	<b>302,977</b> 5.3%	<b>405,970</b> 7.1%	<b>186,275</b> 3.2%	<b>182,817</b> 3.2%	<b>(153,970)</b> -2.7%	<b>27,411</b> 0.5%	<b>-</b>
<b>Cost / &lt;Savings&gt; vs. (Least-Cost)</b> "Option #5A"	<b>639,605</b> 11.4%	<b>736,761</b> 13.2%	<b>385,737</b> 6.9%	<b>491,866</b> 8.8%	<b>376,613</b> 6.7%	<b>456,947</b> 8.2%	<b>559,939</b> 10.0%	<b>340,244</b> 6.1%	<b>336,786</b> 6.0%	<b>-</b>	<b>181,381</b> 3.2%	<b>153,970</b> 2.8%

**Kentucky Power Company**  
**Big Sandy Unit Disposition Options**  
**ANNUAL CPW Cost/<Savings>**

*versus*  
 Retire BS2, Replace w/ 50% of Mitchell 1&2 + BS1 Gas Conversion  
 ('Least-Cost' OPTION #5A) (Excl. Capacity Value Adj re ML)

**"LOWER BAND" Pricing**



## **Additional Kentucky Power Company Strategist® Analysis Requested by the Public Service Commission**

### **General Analysis Assumptions**

#### **Big Sandy Disposition and Unit Addition Assumptions**

The analysis (represented on the results summary as (NEW) "Option #2C") assumed:

- ✓ **Big Sandy 2 will be retired by January 1, 2016** due to the requirements of the U.S. EPA MATS rulemaking as well as the (Third) Modified Consent Decree, **and replaced by July 1, 2017 with a new nominal 760 MW "brownfield" natural gas combined-cycle facility** (i.e., located at the Big Sandy site) (reference Company Option #2B). During the short-term interim period (Jan. 1, 2016 – Jul. 1, 2017), the model assumed capacity and energy were to be purchased from the PJM market.
- ✓ **Big Sandy Unit 1 will be converted to burn natural gas by July 1, 2015** (ref. Company Options #5A and #5B).

#### **Modeling Period**

Consistent with the prior Strategist®-based modeling performed by the Company, this additional analysis was performed on a 'holistic' Kentucky Power capacity and energy resource requirements basis identifying all variable and (incremental) fixed generation-related costs. It was performed over a consistent 30-year study period, with all costs discounted on a cumulative present worth (CPW) basis.

#### **Load Forecast Assumptions**

The load forecast assumed is the same forecast that was utilized as the basis of Company Witness Weaver's direct testimony. The peak demand and internal load forecasts assumed are summarized in Mr. Weaver's direct testimony in Table 1-1 of Exhibit SCW-1, page 3 of 15.

#### **Alternative Capital Cost Assumptions**

The capital cost assumptions are consistent with those utilized in the previous modeled options:

- Big Sandy 1 gas conversion @ \$54 million (\$181/kW, in real 2011 dollars)
- Replacement (Big Sandy brownfield) Natural Gas Combined-Cycle @ \$1,234 million (\$1,168/kW) as summarized in Table 3 (pg. 22) of Company Witness Weaver's direct testimony.

#### **Other Facility Cost & Parameter Assumptions**

All other modeled cost and performance parameters (unit heat rate, fixed & variable operations & maintenance expenses, etc., were the same as utilized in the prior analyses of Option #2B (2017 New-Build Brownfield CC) and Option #5A and #5B (BS1 Gas Conversion).

#### **Commodity Price Assumptions**

The analysis of Option 2C was performed using two separate commodity price forecasts. First, Option 2C was evaluated under the ('Base') "Fleet Transition-CSAPR" commodity price forecast as described by Mr. Weaver in Table 2 (and summarized on Exhibit SCW-3) of his direct testimony. The "Fleet Transition-CSAPR" commodity price forecast was further described by Company Witness Bletzacker in his direct and rebuttal testimonies. The "Fleet Transition-CSAPR" commodity price forecast used to analyze Option 2C is the same commodity price forecast used as the base forecast in the analyses performed by Company Witness Weaver

in his direct and rebuttal testimonies. As described by Mr. Bletzacker on cross-examination during the hearing in this case, none of the long-term drivers of the commodity price forecasts have changed to the extent that an update to the fundamentals driven forecast is required. The forecast used in the analysis of Option 2C continues to represent the most recent suite of long-term commodity prices available for modeling purposes.

That said, and in response to the Commission's request that this additional modeling be performed utilizing "... the most current gas prices", the Company also analyzed "Option 2C" utilizing the "LOWER Band" commodity pricing scenario provided by the Company in this case. By doing so, the Company believes this exercise would then reasonably capture any plausible downside potential for natural gas pricing... which would, naturally, benefit a natural gas-fired resource solution.

The following table represents an abbreviated version of the long-term annual commodity price forecasts -- reflected in Company Witness Weaver's direct testimony Exhibit SCW-3-- isolating exclusively such modeled (Henry Hub-based) natural gas pricing:

Natural Gas Price Forecast Summary  
 (Excerpted from Weaver (Dir) Exhibit SCW-3)

(Used in KPSC-Requested Add'l Analysis)

NATURAL GAS (Henry Hub) (Nominal \$)						
(\$/MMBtu)					DELTA: (\$/MMBtu)	
'BASE' Fleet Transition: CSAPR	Alternative Scenarios				'LOWER Band' versus 'BASE'	
	FT-CSAPR: HIGHER Band	FT-CSAPR: LOWER Band	FT-CSAPR: Early Carbon	FT-CSAPR: No Carbon		
Carbon in 2022	Carbon in 2022	Carbon in 2022	Carbon in 2017			
2012	4.48	4.48	3.94	4.48	4.48	(0.54)
2013	4.94	5.43	4.35	4.94	4.94	(0.59)
2014	5.38	6.02	4.73	5.38	5.38	(0.65)
2015	5.52	6.29	4.86	5.52	5.52	(0.66)
2016	5.99	6.94	5.27	5.99	5.99	(0.72)
2017	6.13	7.23	5.39	6.42	6.13	(0.73)
2018	6.32	7.46	5.56	6.60	6.32	(0.76)
2019	6.46	7.62	5.68	6.73	6.46	(0.77)
2020	6.52	7.69	5.73	6.78	6.52	(0.78)
2021	6.75	7.97	5.94	7.06	6.60	(0.81)
2022	7.07	8.34	6.22	7.22	6.68	(0.85)
2023	7.26	8.57	6.39	7.35	6.86	(0.87)
2024	7.51	8.86	6.61	7.51	7.10	(0.90)
2025	7.75	9.14	6.82	7.75	7.32	(0.93)
2026	7.85	9.26	6.91	7.85	7.42	(0.94)
2027	8.04	9.49	7.08	8.04	7.60	(0.96)
2028	8.22	9.78	7.23	8.22	7.77	(0.99)
2029	8.41	10.08	7.40	8.41	7.94	(1.01)
2030	8.52	10.48	7.50	8.52	8.05	(1.02)

NATURAL GAS (Henry Hub) (REAL, 2010 \$)						
(\$/MMBtu)					DELTA: (\$/MMBtu)	
'BASE' Fleet Transition: CSAPR	Alternative Scenarios				'LOWER Band' versus 'BASE'	
	FT-CSAPR: HIGHER Band	FT-CSAPR: LOWER Band	FT-CSAPR: Early Carbon	FT-CSAPR: No Carbon		
Carbon in 2022	Carbon in 2022	Carbon in 2022	Carbon in 2017			
2012	4.22	4.22	3.71	4.22	4.22	(0.51)
2013	4.57	5.03	4.02	4.57	4.57	(0.55)
2014	4.84	5.42	4.26	4.84	4.84	(0.58)
2015	4.86	5.54	4.27	4.86	4.86	(0.58)
2016	5.18	6.01	4.56	5.18	5.18	(0.62)
2017	5.22	6.16	4.60	5.47	5.22	(0.63)
2018	5.30	6.26	4.67	5.54	5.30	(0.64)
2019	5.34	6.30	4.70	5.56	5.34	(0.64)
2020	5.31	6.26	4.67	5.52	5.31	(0.64)
2021	5.42	6.39	4.77	5.67	5.30	(0.65)
2022	5.59	6.59	4.92	5.70	5.28	(0.67)
2023	5.66	6.68	4.98	5.73	5.35	(0.68)
2024	5.76	6.80	5.07	5.76	5.45	(0.69)
2025	5.86	6.91	5.15	5.86	5.53	(0.70)
2026	5.85	6.90	5.15	5.85	5.53	(0.70)
2027	5.90	6.96	5.19	5.90	5.58	(0.71)
2028	5.94	7.07	5.23	5.94	5.62	(0.71)
2029	5.99	7.18	5.27	5.99	5.66	(0.72)
2030	5.99	7.36	5.27	5.99	5.66	(0.72)



Kentucky Power Co.  
**Big Sandy Unit Disposition Analysis**  
Life-Cycle Study Period (30-Year, 2011-2040) Economics

**MODIFIED TO INCORPORATE A NEW KPSC-REQUESTED BIG SANDY DISPOSITION OPTION ("OPTION #2C")  
AS WELL AS A SENSITIVITY EVALUATION OF  
MITCHELL UNIT 1 AND 2 RETIREMENT DATE OF 1/2036 (i.e., 35-YEAR LIFE)**

**COMPARATIVE** Cumulative Present Worth (CPW) of Relative KPCo "G" Revenue Requirements (2011 \$)  
ADJUSTED TO REFLECT REDUCED CAPACITY VALUE ATTRIBUTABLE TO "MITCHELL TRANSFER" OPTIONS (for 1/2014 thru 5/2015 only)  
**(COST / <SAVINGS> )**

Option #1		Option #2		Option #2C	Option #3		Option #4		Option #5	
RETROFIT Big Sandy Unit 2; RETIRE & REPLACE Big Sandy Unit 1 (5/2015) Retrofit BS2 with Dry (NID) FGD Technology (6/2017)		RETIRE & REPLACE Big Sandy Units 1 and 2 (6/2015 & 1/2016, respectively) Replace BS2 with "Brownfield New-Build" NG-Combined Cycle (@ Big Sandy site) (7/2017)		RETIRE Big Sandy 2 (1/2016)	RETIRE & REPLACE Big Sandy Unit 2 (1/2016)  "CC-Repowered" Big Sandy Unit 1 (7/2017)		RETIRE & REPLACE Big Sandy Units 1 and 2 (6/2015)  Replace with Purchased Capacity & Energy		RETIRE & REPLACE Big Sandy Unit 2 (1/2016)  "Gas-Convert" Big Sandy Unit 1 (7/2015)	
Option #1A	Option #1B	Option #2A	Option #2B	Replace BS2 w/ "Brownfield" New-Build NG- Combined Cycle (7/2017)... and Convert Big Sandy Unit 1 to Burn Natural Gas (7/2015)	Option #3A	Option #3B	Option #4A	Option #4B	Option #5A (Prime) Assuming '35-Yr' Mitchell 1&2 Service-Life	Option #5B
Remaining Capacity from 20% (312-MW) Mitchell Asset Transfer (1/2014)	Remaining Capacity from (PJM) Market Purchases for 10-yr, then new-build CC or CT(s)	Remaining Capacity from 20% (312-MW) Mitchell Asset Transfer (1/2014)	Remaining Capacity from (PJM) Market Purchases for 10-yr, then new-build CC or CT(s)		Remaining Capacity from 20% (312-MW) Mitchell Asset Transfer (1/2014)	Remaining Capacity from (PJM) Market Purchases for 10-yr, then new-build CC or CT(s)	Capacity from (PJM) Market Purchases for 5-yr, then ~700-800 MW CC and/or CT- build	Capacity from (PJM) Market Purchases for 10-yr, then ~700-800 MW CC and/or CT- build	Capacity from 50% (780-MW) Mitchell Asset Transfer (1/2014) with 1/2036 Retirement	Capacity from (PJM) Market Purchases for 5-yr, then New-Build CC and/or CTs

**all versus...**

\$ Millions

("LEAST-COST") Option #5A ASSUMING '35-Year' Mitchell 1&2 Service-Life Sensitivity: RETIRE & REPLACE Big Sandy 2 (6/2015) with 50% (780-MW) Mitchell Units Ownership.  
Transfer (1/2014) with 1/2036 Retirement plus Big Sandy 1 Gas Conversion (7/2015)

BASE:  
"Fleet Transition-CSAPR"  
% Relative Variance

483	697	361	560	438	437	633	411	435		258
8.4%	12.0%	6.2%	9.7%	7.6%	7.5%	10.9%	7.1%	7.5%		4.5%