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September 30, 2011

RECEIVED

VIA HAND DELIVERY

Jeff DeRouen
Executive Director
Kentucky Public Service Commission
211 Sower Boulevard
Frankfort, KY 40601

SEP 30 2011

PUBLIC SERVICE
COMMISSION

RE: Application of Kentucky Utilities Company for Certificates of Public Convenience and Necessity and Approval of its 2011 Compliance Plan for Recovery by Environmental Surcharge
Case No. 2011-00161

Application of Louisville Gas and Electric Company for Certificates of Public Convenience and Necessity and Approval of its 2011 Compliance Plan for Recovery by Environmental Surcharge
Case No. 2011-00162

Dear Mr. DeRouen:

Enclosed please find and accept for filing two originals and fifteen copies each of the Data Requests of Kentucky Utilities Company and Louisville Gas and Electric Company to the Attorney General, Kentucky Industrial Utility Customers, Inc., Sierra Club and Natural Resources Defense Council in the above-referenced matters.

Please confirm your receipt of these filings by placing the stamp of your Office with the date received on the enclosed additional copies and return them to me via our office courier.

Should you have any questions please contact me at your convenience.

Yours very truly,



Kendrick R. Riggs

KRR:ec
Enclosures
cc: Parties of Record

400001 139563/761527.1

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

| | | |
|--|---|----------------------------|
| APPLICATION OF KENTUCKY UTILITIES |) | |
| COMPANY FOR CERTIFICATES OF |) | |
| PUBLIC CONVENIENCE AND NECESSITY |) | CASE NO. 2011-00161 |
| AND APPROVAL OF ITS 2011 COMPLIANCE |) | |
| PLAN FOR RECOVERY BY |) | |
| ENVIRONMENTAL SURCHARGE |) | |

In the Matter of:

| | | |
|--|---|----------------------------|
| APPLICATION OF LOUISVILLE GAS AND |) | |
| ELECTRIC COMPANY FOR CERTIFICATES |) | |
| OF PUBLIC CONVENIENCE AND NECESSITY |) | CASE NO. 2011-00162 |
| AND APPROVAL OF ITS 2011 |) | |
| COMPLIANCE PLAN FOR RECOVERY BY |) | |
| ENVIRONMENTAL SURCHARGE |) | |

DATA REQUESTS OF
KENTUCKY UTILITIES COMPANY AND
LOUISVILLE GAS AND ELECTRIC COMPANY
PROPOUNDED TO ATTORNEY GENERAL

Kentucky Utilities Company (“KU”) and Louisville Gas and Electric Company (“LG&E”) (collectively, the “Companies”), respectfully submit the following data requests to the Attorney General of the Commonwealth of Kentucky, by and through his Office of Rate Intervention, (“AG”), to be answered by the date specified in the procedural schedule ordered by the Kentucky Public Service Commission (“Commission”) in this matter.

Instructions

1. As used herein, “Documents” include all correspondence, memoranda, notes, e-mail, maps, drawings, surveys or other written or recorded materials, whether external or internal, of every kind or description in the possession of, or accessible to, AG, its witness, or its counsel.

2. Please identify by name, title, position, and responsibility the person or persons answering each of these data requests.

3. These requests shall be deemed continuing so as to require further and supplemental responses if the AG receives or generates additional information within the scope of these requests between the time of the response and the time of any hearing conducted herein.

4. To the extent that the specific document, work-paper, or information as requested does not exist, but a similar document, work-paper, or information does exist, provide the similar document, work-paper, or information.

5. To the extent that any request may be answered by a computer printout, spreadsheet, or other form of electronic media, please identify each variable contained in the document or file that would not be self-evident to a person not familiar with the document or file.

6. If the AG objects to any request on the ground that the requested information is proprietary in nature, or for any other reason, please notify the undersigned counsel as soon as possible.

7. For any document withheld on the ground of privilege, state the following: date; author; addressee; indicated or blind copies; all persons to whom distributed, shown or explained; and the nature and legal basis for the privilege asserted.

8. In the event any document requested has been destroyed or transferred beyond the control of the AG, its counsel, or its witness, state: the identity of the person by whom it was destroyed or transferred and the person authorizing the destruction or transfer; the time, place and method of destruction or transfer; and the reason(s) for its destruction or transfer. If such a document was destroyed or transferred by reason of a document retention policy, describe in detail the document retention policy.

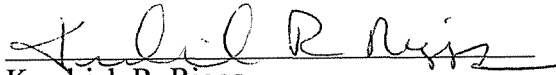
9. If a document responsive to a request is a matter of public record, please produce a copy of the document rather than a reference to the record where the document is located.

Data Requests

1. To the extent not already provided, please provide all work-papers used or created by Dr. Woolridge to support his testimony (including exhibits).
 - a. Please provide an electronic copy of all work-papers (including spreadsheets) used or created by Dr. Woolridge to support his testimony (including exhibits), including those already provided in paper format, with spreadsheet formulas intact and unprotected. To the extent feasible, please provide all spreadsheets in Microsoft Excel format.
 - b. Please provide copies of all documents, articles, studies, or other publications referenced in Dr. Woolridge's testimony.
2. Does Dr. Woolridge agree that bond rating agencies, such as Standard & Poor's, consider the impact of regulation on a utility's risks when evaluating credit ratings? If the answer is anything other than an unqualified "yes," please provide a complete explanation.
3. Does Dr. Woolridge believe that the beta values referenced on Exhibit JRW-11 reflect the market's assessment of the impact of regulation on the utilities' relative investment risks? If the answer is anything other than an unqualified "yes," please provide a complete explanation.
4. Please refer to Dr. Woolridge's testimony at page 31 lines 8-10. Please provide a detailed explanation of how Dr. Woolridge adjusted the DPS growth rate downward from the projected EPS growth rate for each of the companies in his proxy group, and provide the magnitude of the adjustment for each utility.
5. Please refer to Dr. Woolridge's testimony at page 42 lines 14-17. Did Dr. Woolridge directly rely on this 3.4% equity risk premium in determining his recommended ROE? If the answer is anything other than an unqualified "no," please calculate the cost of equity estimate implied by this risk premium for Dr. Woolridge's proxy group.
6. Please refer to Dr. Woolridge's testimony from page 42 line 19 through page 43 line 3. Did Dr. Woolridge directly rely on this 2.87% equity risk premium in determining his recommended ROE? If the answer is anything other than an unqualified "no," please calculate the cost of equity estimate implied by this risk premium for Dr. Woolridge's proxy group.
7. Please refer to Dr. Woolridge's testimony from page 45 line 18 through page 46 line 1. Please provide all cost of equity estimates developed by Dr. Woolridge using the DCF and CAPM approaches discussed in his testimony for the industry groups presented on JRW-8. If Dr. Woolridge did not perform these analyses, please indicate in detail how the referenced statement confirms the reasonableness of his recommended ROE.

Dated: September 30, 2011

Respectfully submitted,



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Telephone: (502) 627-2088

*Counsel for Kentucky Utilities Company and
Louisville Gas and Electric Company*

CERTIFICATE OF SERVICE

I hereby certify that a true and accurate copy of the foregoing Data Requests were served upon the following individuals by first class United States mail, postage prepaid, on the 30th day of September 2011:

Dennis G. Howard II
Lawrence W. Cook
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Office of Rate Intervention
1024 Capital Center Drive, Suite 200
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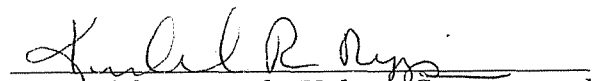
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Counsel for Kentucky Utilities Company and
Louisville Gas and Electric Company

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

| | | |
|--|---|----------------------------|
| APPLICATION OF KENTUCKY UTILITIES |) | |
| COMPANY FOR CERTIFICATES OF |) | |
| PUBLIC CONVENIENCE AND NECESSITY |) | CASE NO. 2011-00161 |
| AND APPROVAL OF ITS 2011 COMPLIANCE |) | |
| PLAN FOR RECOVERY BY |) | |
| ENVIRONMENTAL SURCHARGE |) | |

In the Matter of:

| | | |
|--|---|----------------------------|
| APPLICATION OF LOUISVILLE GAS AND |) | |
| ELECTRIC COMPANY FOR CERTIFICATES |) | |
| OF PUBLIC CONVENIENCE AND NECESSITY |) | CASE NO. 2011-00162 |
| AND APPROVAL OF ITS 2011 |) | |
| COMPLIANCE PLAN FOR RECOVERY BY |) | |
| ENVIRONMENTAL SURCHARGE |) | |

**DATA REQUESTS OF
KENTUCKY UTILITIES COMPANY AND
LOUISVILLE GAS AND ELECTRIC COMPANY
PROPOUNDED TO KENTUCKY INDUSTRIAL UTILITY CUSTOMERS, INC.**

Kentucky Utilities Company (“KU”) and Louisville Gas and Electric Company (“LG&E”) (collectively, the “Companies”), respectfully submit the following data requests to the Kentucky Industrial Utility Customers, Inc. (“KIUC”), to be answered by the date specified in the procedural schedule ordered by the Kentucky Public Service Commission (“Commission”) in this matter.

Instructions

1. As used herein, “Documents” include all correspondence, memoranda, notes, e-mail, maps, drawings, surveys or other written or recorded materials, whether external or internal, of every kind or description in the possession of, or accessible to, KIUC, its witness, or its counsel.

2. Please identify by name, title, position, and responsibility the person or persons answering each of these data requests.

3. These requests shall be deemed continuing so as to require further and supplemental responses if KIUC receives or generates additional information within the scope of these requests between the time of the response and the time of any hearing conducted herein.

4. To the extent that the specific document, work-paper, or information as requested does not exist, but a similar document, work-paper, or information does exist, provide the similar document, work-paper, or information.

5. To the extent that any request may be answered by a computer printout, spreadsheet, or other form of electronic media, please identify each variable contained in the document or file that would not be self-evident to a person not familiar with the document or file.

6. If KIUC objects to any request on the ground that the requested information is proprietary in nature, or for any other reason, please notify the undersigned counsel as soon as possible.

7. For any document withheld on the ground of privilege, state the following: date; author; addressee; indicated or blind copies; all persons to whom distributed, shown or explained; and the nature and legal basis for the privilege asserted.

8. In the event any document requested has been destroyed or transferred beyond the control of KIUC, its counsel, or its witness, state: the identity of the person by whom it was destroyed or transferred and the person authorizing the destruction or transfer; the time, place and method of destruction or transfer; and the reason(s) for its destruction or transfer. If such a document was destroyed or transferred by reason of a document retention policy, describe in detail the document retention policy.

9. If a document responsive to a request is a matter of public record, please produce a copy of the document rather than a reference to the record where the document is located.

Data Requests

1. Provide the names of each member of the KIUC that in fact is represented by KIUC in Case Nos. 2011-00161 and 2011-00162.
2. Please provide all data, assumptions and calculations in Excel format with formulas intact for each of the Baron Exhibits SJB-2 through SJB-6.
3. Provide a detailed description of all changes that would need to be made to LG&E's [or KU's] tariff to implement Mr. Baron's proposal.
4. Provide a detailed description of all changes that would need to be made to the monthly ECR forms submitted by LG&E [or KU] to implement Mr. Baron's proposal.
5. Refer to Page 7, lines 12 through 15 of Mr. Baron's testimony where he says:

“Because the majority of ECR revenue requirements are fixed costs that are unrelated to energy use or the level of the Companies’ fuel expenses, it is not appropriate to apply the environmental surcharge to customers on the basis of fuel expenses.”

Given this assertion, explain why it is appropriate to allocate ECR expenses between C&I customers and non-C&I customers based on total revenue rather than using net revenue for all classes?

6. Please provide any work papers or support documents for Mr. Baron's Table No. 1 at page 9 of his testimony.
7. Please explain how Mr. Baron's proposal would affect high-load-factor customers served on the General Service Rate Schedule.
8. Refer to the Direct Testimony of Stephen Baron page 12. Please explain why Rate Schedule GS (which does not have a demand charge component) is being treated differently than the other rate schedules that do not have a demand charge component under the proposed methodology by the KIUC.
9. Given that there may be customers who are served on residential rate (“RS”), Volunteer Fire Department (“VFD”), Lighting (“LE, “St. LT and P.O. Lt.”), Traffic Energy (“TE”) and All Electric Schools (“AES”) that have load factors similar to the above-average load factor C&I customers, should such customers also be allocated ECR charges by removing fuel revenue from the ECR allocator for such customers?
10. Refer to the Direct Testimony of Stephen Baron page 13. Under the KIUC's proposals there would be two different ECR billing factors for each month.

- a. How would the KIUC propose to determine the two monthly ECR billing factors in the monthly ECR filings with the Commission?
 - b. How would the KIUC propose to determine the actual over/(under) recovery position during the review periods?
 - c. How would the KIUC propose to perform a roll-in to base rates during the 2-year review proceedings?
11. Refer to the Direct Testimony of Stephen Baron page 15 and Baron Exhibit SJB-6. Please provide the calculations for Rate Schedule FLS in the same manner as provided for all other Rate Schedules.
12. Refer to the Direct Testimony of Lane Kollen page 4 line 20 through page 5 line 1. Provide the calculation of the referenced \$161 million and \$225 million in savings for KU and LG&E customers, respectively. Provide all data, assumptions and calculations in Excel format with formulas intact.
13. Refer to the Direct Testimony of Lane Kollen page 5 lines 7 through 11. Provide the calculation of the referenced \$75 million and \$97 million in savings for KU and LG&E customers, respectively. Provide all data, assumptions and calculations in Excel format with formulas intact.
14. Refer to the Direct Testimony of Lane Kollen page 5 lines 16 through 23. Provide all prior Commission decisions that includes “the allocation of all new tax-exempt pollution control debt” to environmental projects.
15. Refer to the Direct Testimony of Lane Kollen page 8 lines 1 through 4. Provide all supporting documentation that would indicate that “the proposed regulations may never be adopted.”
16. Refer to the Direct Testimony of Lane Kollen pages 11 and 12. Provide all data, assumptions and calculations in Excel format with formulas intact that support the two graphs.
17. Refer to the Direct Testimony of Lane Kollen page 12 lines 6 through 8. Provide a listing of all states that have authorized the use of securitization to finance the costs of assets that the utility currently owns and operates (excluding storm reconstruction assets).
18. Please state specifically the support for Mr. Kollen’s statement at lines 5-6 at page 20 of this testimony, “Short-term debt is used to finance the projects during construction, and generally is not used to finance the plant in service amounts”
19. Please provide all documents in Mr. Kollen’s possession which refer or relate to Florida Public Service Commission Rule 25-14.004

20. Please provide a complete copy of Mr. Kollen's testimony in March 2002 and July 2009 before the Florida Public Service Commission involving Florida Power and Light Company.
21. Please refer to Appendix A to Mr. Hill's testimony and provide a detailed list of each and every regulatory proceeding in which he has testified including the jurisdiction, case or docket number, style or name of the case, regulated company, party represented, regulatory authority, date of the testimony and a brief description of the topics in the testimony.
22. Concerning Mr. Hill's testimony, please provide copies of all electronic spreadsheets used in the development of the analyses and exhibits in their original format, with all formulas intact.
23. Please provide copies of all documents, articles, studies, or other publications referenced in Mr. Hill's testimony.
24. Does Mr. Hill agree that bond rating agencies, such as Standard & Poor's, consider the impact of regulation on a utility's risks when evaluating credit ratings? If the answer is anything other than an unqualified "yes," please provide a complete explanation.
25. Please refer to Mr. Hill's testimony at page 3 lines 19-23. Please provide a list of all cost recovery mechanisms applicable to each of the utilities in Mr. Hill's proxy group, including environmental cost recovery trackers. If Mr. Hill did not examine the extent to which his proxy utilities operate under similar adjustment mechanisms, please explain why not.

Dated: September 30, 2011

Respectfully submitted,



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Louisville, Kentucky 40202
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*Counsel for Kentucky Utilities Company and
Louisville Gas and Electric Company*

CERTIFICATE OF SERVICE

I hereby certify that a true and accurate copy of the foregoing Data Requests were served upon the following individuals by first class United States mail, postage prepaid, on the 30th day of September 2011:

Dennis G. Howard II
Lawrence W. Cook
Assistant Attorneys General
Office of the Attorney General
Office of Rate Intervention
1024 Capital Center Drive, Suite 200
Frankfort, KY 40601-8204

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Chicago, IL 60660



*Counsel for Kentucky Utilities Company and
Louisville Gas and Electric Company*

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF KENTUCKY UTILITIES)
COMPANY FOR CERTIFICATES OF)
PUBLIC CONVENIENCE AND NECESSITY) **CASE NO. 2011-00161**
AND APPROVAL OF ITS 2011 COMPLIANCE)
PLAN FOR RECOVERY BY)
ENVIRONMENTAL SURCHARGE)

In the Matter of:

APPLICATION OF LOUISVILLE GAS AND)
ELECTRIC COMPANY FOR CERTIFICATES)
OF PUBLIC CONVENIENCE AND NECESSITY) **CASE NO. 2011-00162**
AND APPROVAL OF ITS 2011)
COMPLIANCE PLAN FOR RECOVERY BY)
ENVIRONMENTAL SURCHARGE)

DATA REQUESTS OF
KENTUCKY UTILITIES COMPANY AND
LOUISVILLE GAS AND ELECTRIC COMPANY
PROPOUNDED TO SIERRA CLUB AND
NATURAL RESOURCES DEFENSE COUNCIL

Kentucky Utilities Company (“KU”) and Louisville Gas and Electric Company (“LG&E”) (collectively, the “Companies”), respectfully submit the following data requests to the Sierra Club (“SC”) and Natural Resources Defense Council (“NRDC”) (collectively, “Environmental Group”), to be answered by the date specified in the procedural schedule ordered by the Kentucky Public Service Commission (“Commission”) in this matter.

Instructions

1. As used herein, “Documents” include all correspondence, memoranda, notes, e-mail, maps, drawings, surveys or other written or recorded materials, whether external or internal, of every kind or description in the possession of, or accessible to, Environmental Group, its witness, or its counsel.

2. Please identify by name, title, position, and responsibility the person or persons answering each of these data requests.

3. These requests shall be deemed continuing so as to require further and supplemental responses if the Environmental Group receives or generates additional information within the scope of these requests between the time of the response and the time of any hearing conducted herein.

4. To the extent that the specific document, work-paper, or information as requested does not exist, but a similar document, work-paper, or information does exist, provide the similar document, work-paper, or information.

5. To the extent that any request may be answered by a computer printout, spreadsheet, or other form of electronic media, please identify each variable contained in the document or file that would not be self-evident to a person not familiar with the document or file.

6. If the Environmental Group objects to any request on the ground that the requested information is proprietary in nature, or for any other reason, please notify the undersigned counsel as soon as possible.

7. For any document withheld on the ground of privilege, state the following: date; author; addressee; indicated or blind copies; all persons to whom distributed, shown or explained; and the nature and legal basis for the privilege asserted.

8. In the event any document requested has been destroyed or transferred beyond the control of the Environmental Group, its counsel, or its witness, state: the identity of the person by whom it was destroyed or transferred and the person authorizing the destruction or transfer; the time, place and method of destruction or transfer; and the reason(s) for its destruction or

transfer. If such a document was destroyed or transferred by reason of a document retention policy, describe in detail the document retention policy.

9. If a document responsive to a request is a matter of public record, please produce a copy of the document rather than a reference to the record where the document is located.

Data Requests

1. Please refer to Dr. Fisher's direct testimony at 16, wherein he states, "Using cost assumptions from a [sic] North American Reliability Council (NERC), I estimate the cost of a cooling tower for Mill Creek unit 1 at around \$70 million."
 - a. Please describe the type of cooling tower to which Dr. Fisher refers.
 - b. Including the specific NERC reference document referred to in the direct testimony, please provide any and all documents or other information upon which Dr. Fisher based his cost projection.
2. Please refer to Dr. Fisher's direct testimony at 42, wherein he states, "[T]he Commission should deny CPCNs and rate treatment for any upgrades to the Companies' coal units at this time."
 - a. How does Dr. Fisher propose LG&E and KU comply with the environmental regulations at issue in this proceeding while meeting their service obligations to customers if the Commission followed Dr. Fisher's recommendation?
 - b. Has Dr. Fisher attempted to calculate the costs of his recommendation?
 - c. For KU and LG&E for each year of the study period, what would be the rate impact of following Dr. Fisher's recommendation? Please provide all calculations and supporting work-papers in electronic format (the latter in Microsoft Excel format with formulas intact and unlocked).
3. Dr. Fisher states at page 37 of his direct testimony that he believes the Companies have used too high a cost for emergency energy in their modeling.
 - a. What is the value Dr. Fisher would place on unserved energy?
 - b. Please provide all reasoning and documents supporting Dr. Fisher's proposed value.
4. At page 40 of Dr. Fisher's direct testimony, he suggests that the order of retirement the Companies used to evaluate whether to retrofit with environmental controls or to retire their coal units may have affected their proposed retrofit-versus-retire decisions for certain units.

- a. Which order(s) of retirements would Dr. Fisher propose in the alternative?
 - b. What impact, if any, would Dr. Fisher's proposed retirement ordering(s) have on the retrofit-versus-retire decisions the Companies have proposed? Please provide all supporting work-papers and other related documents in paper and electronic formats.
5. The Companies did not contemplate the transmission cost impacts of retiring units they did not recommend retiring. Has Dr. Fisher attempted to estimate what would be the transmission costs necessitated by the unit retirements his various modeling runs suggested, including retiring Brown Units 1 and 2?
 - a. If so, please provide the estimate and all supporting work-papers and other related documents in paper and electronic formats.
 - b. If not, please explain why Dr. Fisher recommended retiring the Brown units without taking into account such costs.
6. Dr. Fisher states at page 13 of his direct testimony, "After accounting for expected retirements, the Companies anticipate retrofitting their remaining partially-controlled units (Brown 1-3, Ghent 1-4, Mill Creek 1-4, and Trimble County 1) with flue gas desulfurization (FGD)" Please explain where in the 2011 compliance filing the Companies state a plan to "retrofit" their remaining units at Brown, Ghent, Mill Creek and Trimble Co. 1 with FGD.
7. Please provide the forecast of natural gas prices utilized as an input to Strategist in Synapse's re-analysis.
8. Please confirm that the gas price forecast was the only input to Strategist that was changed in developing the NPVRR values for Box 3 in Exhibit JIF-2. If other Strategist inputs changed, please provide a summary of the changes.
9. Please see page 8 of Dr. Fisher's direct testimony. What is the basis for the phrase, "ranging in size from 493 to 907 MW," at the bottom of the page?
10. Please produce in machine readable or txt format the input and output files for all Strategist modeling that Synapse completed in conjunction with its re-analysis.
11. To the extent not provided in response to DR 10 above, please produce any work paper, source document, and, in machine readable or txt format, input and output files, used in or developed as part of the modeling carried out in developing Synapse's re-analysis.
12. Please see Dr. Fisher's direct testimony at page 24, lines 3-6.
 - a. Which 13 counties in Kentucky are estimated to violate the 2008 ozone standard at 0.075 ppm? Provide all support and documents indicating the 13 counties are estimated to violate the 2008 ozone standard.

- b. Based on the most recent set of 3-year-average ozone data, which counties in Kentucky violate the 2008 ozone standard?
 - c. Which of the facilities in this 2011 Compliance Plan are located in counties that exceed the 2008 standard?
 - d. If facilities are not located in those counties, will those facilities be subject to the installation of NO_x controls?
13. Please see Dr. Fisher's direct testimony at page 25, lines 15-17. Based on the reference cited in footnote 17 on page 24, Fayette County's 3-year average ozone level was 0.072 ppm, which is not "so far out of compliance" if the revised standard in a future proposed rule was set at 0.070 ppm. What impact will the addition of the SCR at Brown 3 scheduled to be in service in 2012 have on the Fayette County ozone monitor averages?
14. Please see Dr. Fisher's direct testimony at page 29, line 19. What is BACT (Best Available Control Technology) for CO₂?
15. Please see Dr. Fisher's direct testimony at page 31, line 27.
- a. If the Companies were to retain only Trimble Co. 1, Ghent 4, and Ghent 2 as suggested in Dr. Fisher's version of the model, what would be the cost imposed on the customers to replace the other generating units?
 - i. What would the expected rate impacts be in that case for LG&E and KU for each year of the study period?
 - ii. Does Dr. Fisher recommend that the Companies also retire Trimble Co. 2?
 - iii. If the replacement energy were derived from natural gas generation, is there adequate gas infrastructure in Kentucky?
 - iv. If the replacement energy were derived from wind energy, how much capacity would be required to replace the capacity Dr. Fisher suggested would be uneconomic? Where would that wind energy originate? Is there adequate electric transmission infrastructure in place to support that alternative?
 - v. What would be the impact on the bulk electric system reliability if the transmission infrastructure is not available at the time of the expected compliance deadlines?
16. Please provide the factual basis and supporting documentation for the CO₂ price forecast discussed on page 31, lines 1-4, of Dr. Fisher's direct testimony. Please do not provide in response another copy of the Synapse 2011 Carbon Dioxide Price Forecast that was included as Exhibit JIF-4 to Dr. Fisher's testimony; rather, please provide searchable electronic versions of all documents cited in that forecast, as well as any and all other

documentation and factual support for the CO2 pricing forecast discussed in Dr. Fisher's testimony.

17. To the extent not provided in response to DR 16 above, please provide the factual basis and any supporting documentation for Dr. Fisher's statement on page 31, line 3, of his direct testimony, which necessarily implies that CO2 pricing will apply to utilities in Kentucky beginning in 2018.
18. Please provide all models, assumptions, and data (in machine readable format) related to the preparation of the AESC natural gas price forecast discussed on page 21 of Dr. Fisher's direct testimony.
19. Please provide all data and documentation that supports Dr. Fisher's statement on page 19, line 25, of his direct testimony that "most analysts believe that the [natural gas] price will rise slowly over the next two decades."
20. Please refer to Figure 2 on page 22 of Dr. Fisher's direct testimony.
 - a. Please provide all supporting documentation and assumptions that cause the lower growth rate of natural gas prices beginning in 2016 as compared to 2011 through 2015.
 - b. Please provide all supporting documentation and assumptions that cause the higher growth rate of natural gas prices beginning in 2022 as compared to 2016 through 2021.
21. Please provide a list of the "recent legislative proposals to mitigate carbon dioxide (CO2) emissions" described on page 29, lines 8-9, in Dr. Fisher's direct testimony and the current status of those legislative proposals.
22. Please provide all documentation that supports the use of CO2 pricing as the basis for compliance with EPA's CO2 BACT regulations.
23. Please provide all documentation for Dr. Fisher's statement on page 36, lines 27-28, of his direct testimony, "In reality, the Companies are very well interconnected with their neighbors"
24. Please provide all documentation supporting Dr. Fisher's statements on page 37, lines 3-7, of his direct testimony regarding the Companies' ability to purchase energy for "short periods" and for "fairly limited capacity requirements." How does he define "short" and "limited"?
25. What is a "sustainability target" level of CO2 emissions as used on page 1-19 in the report referenced in footnote 15 on page 20 of Dr. Fisher's direct testimony?
26. Please refer to Figure 1 on page 21 and Figure 2 on page 22 of Dr. Fisher's direct testimony.

- a. Please provide the underlying data in machine readable tabular format for each of the forecasts shown on Figure 1 and Figure 2.
 - b. Please state and explain the assumptions included in the AESC 2011 Henry Hub natural gas price forecast concerning the existing and proposed environmental regulations that are discussed on pages 11 and 12 of Dr. Fisher's testimony (Section 3: Environmental Regulations Faced by LG&E/KU).
 - i. Are those assumptions consistent or inconsistent with the assumptions Dr. Fisher made regarding the same environmental regulations in the other parts of his analysis of the Companies' filing? Please explain in detail.
 - ii. If Dr. Fisher's assumptions about the environmental regulations discussed at pages 11-12 of his direct testimony are correct, will the likely effect of such regulations be to increase or decrease electrical generation's contribution to the demand for natural gas? Will that likely affect on natural gas demand tend to increase or decrease natural gas prices? Please explain in detail.
 - c. Explain the underlying assumptions for CO2 regulations included in the AESC 2011 Henry Hub natural gas price forecast and explain whether those assumptions are consistent or inconsistent with the assumptions regarding CO2 regulations made by Dr. Fisher in the other aspects of his analysis of the Companies' filing.
27. Please refer to the document titled "Avoided Energy Supply Costs in New England: 2011 Report," dated July 21, 2011 (as referenced in Footnote 15 on page 20 of Dr. Fisher's direct testimony), which provides the basis for Dr. Fisher's recommended gas forecast labeled "AESC 2011" in Figure 1 on page 21 of Dr. Fisher's testimony.
- a. Please describe the intended purpose of this report and explain if it has been used by the sponsoring utilities in their analysis of the construction of emissions controls and/or coal unit retirements.
 - b. Please provide the underlying data in machine readable tabular format for the following exhibits.
 - i. Chapter 1 – Exhibits 1-2, 1-3, 1-5, 1-14, 1-15, and 1-16
 - ii. Chapter 3 – Exhibits 3-4, 3-6, 3-8, 3-9, 3-10, 3-11, 3-12, 3-13, 3-14, 3-15
 - c. Referring to Exhibit 3-4 on page 3-9, please demonstrate how the monthly NYMEX futures gas prices were converted to the annual 2010 dollar values shown as part of the AESC 2011 forecast in Figure 1 on page 21 of Dr. Fisher's testimony. Please provide all assumptions made and workpapers used in that process.
 - d. Referring to page 3-14, please provide all documentation supporting the statement that "Our total uses a 50-50 weighting based on judgment and the approximate

quantities of each category of reserves reported for 2010.” Please explain the degree to which judgment was used in this process and demonstrate why the 50-50 weighting was judged to be appropriate.

- e. Referring to page 3-14, please refer to the statement that “The net result of the rule changes is not clear but it may have increased PUDs.” Please explain how this ambiguity around the impact of SEC rule changes was incorporated in the AESC 2011 Base Case gas price forecast or in the High Price or Low Price cases.
- f. Referring to page 3-17, please refer to the following excerpt:

“There is some indication that the supply of natural gas from the U.S. may decline. The independent producers, particularly the large ones such as Chesapeake, Devon and EOG Resources, all plan to shift exploration and drilling to U.S. places where production will be liquids rich either for crude oil and condensate or at least larger volume NGL production associated with natural gas production. They plan to reduce drilling for dry gas. This shift appears to be under way.”

Please explain how this ongoing shift in gas supply is incorporated in the AESC 2011 gas price forecast.

- g. Referring to page 3-17, please refer to the statement that “The next step in developing a forecast of annual Henry Hub natural-gas prices is to review the forecasts available from AEO 2011 and AEO 2010 to determine which forecast is most consistent with our estimate of the Henry Hub price needed to cover the full-cost of shale gas.” Please explain whether the AESC 2011 forecast is based on the assumptions in a specific AEO forecast or if a specific AEO forecast was chosen due to its similarity in results to Synapse’s cost estimates.
- h. Referring to page 3-18, please provide all documentation supporting the choice of the AEO 2010 High Shale Case as the basis for the AESC 2011 Base Case. Please explain the underlying assumption(s) for the size of the shale gas resource used.
- i. Referring to page 3-20, please refer to the statement that “The estimate of the marginal cost of shale gas implicit in the various AEO 2011 cases are significantly less than our estimate of the full-cycle, all-in cost of finding, developing and producing shale gas.” Does this statement imply that the AEO 2011 cases are less reliable than the AEO 2010 cases? How does Synapse ensure its cost estimates are more accurate than those in the AEO?
- j. Referring to page 3-25, please refer to the statement, “The AESC High Price Case is drawn from the AEO 2010 Slow Oil & Gas Technology case.” Please provide all documentation supporting the choice of this case as the “AESC 2011 High Price Case” compared to other potential AEO cases or compared to other forecasts considered by Synapse.

- k. Referring to pages 3-25 and 3-26, please refer to the discussion of the “AESC 2011 Low Price Case.”
 - i. Please refer to the statement on page 3-25, “The AESC 2011 Low Price case assumes a decrease in finding, development and production costs for natural gas due to developments in oil and gas technology 50% more rapid than in the Base Case.” Please provide all documentation that supports using the 50% factor.
 - ii. Please explain why it is appropriate to use several forecasts and methods to develop the Low Price case over the different time periods of the forecast compared to using single AEO forecasts for the Base Case and High Price Case.
 - l. Referring to page 3-29, please refer to the statement, “However, other than the disclosure of chemicals in fracturing fluid, our review of the literature did not find any public projections of specific changes in existing Federal, state and local regulations, including scope and timing, from which to develop a credible estimate of a material impact on the cost of shale gas production.” Please explain if any potential regulations regarding shale gas development were considered in the AESC 2011 Base Case, Low Price Case, or High Price Case. Also, please explain how this level of consideration is or is not appropriate and how it is or is not consistent with Dr. Fisher’s expectations regarding other potential environmental regulations set forth in his testimony.
 - m. Please refer to the discussion on page 34 concerning the methodology used to quantify Henry Hub price volatility as shown in Exhibit 3-15. Please explain if this approach for measuring volatility is standard practice, and please cite other references in which this approach has been used.
28. Please refer to Dr. Fisher’s direct testimony at page 13, lines 1-3. Please explain in detail the “few critical exceptions.”
29. Please refer to Dr. Fisher’s direct testimony at page 13, lines 10-11. Please provide all analysis that shows the controls included in the 2011 Plan are “not necessarily sufficient.” Provide in detail what additional controls are necessary, including the timing of installation, technology, costs, and any other details concerning the control equipment.
30. Please refer to Dr. Fisher’s direct testimony at page 23, lines 10-16. Are there other technologies other than SCR for controlling NOx emissions? Did Dr. Fisher consider any other technology? Please explain which other technologies Dr. Fisher considered. If he did not consider any other technologies, please explain why he did not do so.
31. Please refer to Dr. Fisher’s direct testimony at page 26, lines 5-7. Please provide all analysis supporting the statement, “[T]he operational plants that do not have SCR will require this control technology (Brown 1 & 2, Ghent 2, and Mill Creek 1 & 2), to meet local attainment.” If no analysis was performed, what is the basis for the statement made?

32. Please refer to Dr. Fisher's direct testimony at page 27, lines 18-20. Please provide all analysis supporting the statement, "[T]he ozone NAAQS will require SCR on the Companies coal plants." If no analysis was performed, what is the basis for the statement?
33. Please refer to Dr. Fisher's direct testimony at page 33, lines 7-11. For each of the five concerns listed, please provide all documentation, analysis, and reports that justify and validate each concern.
34. Please refer to Rachel Wilson's direct testimony at page 5. Please provide all output reports and documents that demonstrate in detail that she was "able to exactly reproduce the Companies' results."

Dated: September 30, 2011

Respectfully submitted,



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CERTIFICATE OF SERVICE

I hereby certify that a true and accurate copy of the foregoing Data Requests were served upon the following individuals by first class United States mail, postage prepaid, on the 30th day of September 2011:

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