



a PPL company

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

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AUG 05 2011

PUBLIC SERVICE
COMMISSION

**Louisville Gas and
Electric Company**
State Regulation and Rates
220 West Main Street
P.O. Box 32010
Louisville, Kentucky 40232
www.lge-ku.com

Robert M. Conroy
Director - Rates
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August 5, 2011

RE: *In the Matter of: The 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 an original and fifteen (15) copies of Louisville Gas and Electric Company's (LG&E) response to the First Set of Interrogatories of Drew Foley, Janet Overman, Gregg Wagner, Sierra Club, and the Natural Resource Defense Council dated July 12, 2011, in the above-referenced matter.

Should you have any questions regarding the enclosed, please contact me at your convenience.

Sincerely,

Robert M. Conroy

cc: Parties of Record

VERIFICATION

COMMONWEALTH OF KENTUCKY)
) **SS:**
COUNTY OF JEFFERSON)

The undersigned, **Gary H. Revlett**, being duly sworn, deposes and says that he is Director – Environmental Affairs for LG&E and KU Services Company, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.

Gary H. Revlett

Gary H. Revlett

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 4th day of August 2011.

Jammy J. Elzy

Notary Public (SEAL)

My Commission Expires:

November 9, 2014

VERIFICATION

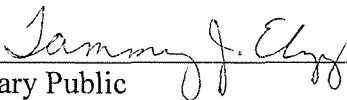
COMMONWEALTH OF KENTUCKY)
) SS:
COUNTY OF JEFFERSON)

The undersigned, **Charles R. Schram**, being duly sworn, deposes and says that he is Director – Energy Planning, Analysis and Forecasting for LG&E and KU Services Company, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.



Charles R. Schram

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 4th day of August 2011.



Notary Public (SEAL)

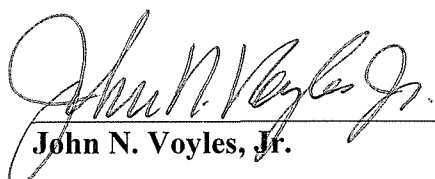
My Commission Expires:

November 9, 2014

VERIFICATION

COMMONWEALTH OF KENTUCKY)
) SS:
COUNTY OF JEFFERSON)

The undersigned, **John N. Voyles, Jr.**, being duly sworn, deposes and says that he is Vice President, Transmission and Generation Services for Louisville Gas and Electric Company and an employee of LG&E and KU Services Company, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.



John N. Voyles, Jr.

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 5th day of August 2011.



Notary Public (SEAL)

My Commission Expires:

November 9, 2014

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

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

**RESPONSE OF
LOUISVILLE GAS AND ELECTRIC COMPANY
TO THE FIRST SET OF INTERROGATORIES OF
DREW FOLEY, JANET OVERMAN, GREGG WAGNER,
SIERRA CLUB, AND THE NATURAL RESOURCE DEFENSE COUNCIL
DATED JULY 12, 2011**

FILED: August 5, 2011

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
Drew Foley, Janet Overman, Gregg Wagner, Sierra Club and the
Natural Resource Defense Council**

Case No. 2011-00162

Question No. 1

Witness: Charles R. Schram / Gary H. Revlett

Q-1. Refer to page 8, lines 1-5 of the testimony of Lonnie E. Bellar. Identify “any necessary adjustments to LG&E’s 2011 Plan that are responsive to CATR,” which was finalized as the Cross-State Air Pollution Rule on July 6, 2011.

A-1. Please see the response to KPSC-1 Question No. 50.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
Drew Foley, Janet Overman, Gregg Wagner, Sierra Club and the
Natural Resource Defense Council**

Case No. 2011-00162

Question No. 2

Witness: John N. Voyles, Jr. / Charles R. Schram

- Q-2. Refer to page 7, lines 15-20 of the testimony of John N. Voyles Jr. Identify which “additional SCR installations” were deferred by LG&E’s 2011 Plan and for how long they will be deferred.
- A-2. Please see the responses to KPSC-1 Question Nos. 57 and 59 in the KU proceeding, Case No. 2011-00161. The potential additional SCR installations are limited to the Companies’ remaining non-SCR equipped units. The Companies’ projected system NO_x emissions are less than the emission allowances provided in CSAPR. Therefore, the Companies will defer any additional SCR installations until required by future regulations.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
Drew Foley, Janet Overman, Gregg Wagner, Sierra Club and the
Natural Resource Defense Council**

Case No. 2011-00162

Question No. 3

Witness: Charles R. Schram

- Q-3. Refer to Table 1 on page 3 of Exhibit CRS-1. Identify in what year the dollar figures identified therein are.
- A-3. The total capital costs in Table 1 represent the sum of the nominal capital costs.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
Drew Foley, Janet Overman, Gregg Wagner, Sierra Club and the
Natural Resource Defense Council**

Case No. 2011-00162

Question No. 4

Witness: Charles R. Schram

- Q-4. Refer to Table 2 on page 4 of Exhibit CRS-1. For each unit listed in Table 2, state whether the PVRR of installing controls identified therein includes each of the following category of costs. For each category, if the answer is yes, identify the total PVRR in 2011 dollars that was included for that cost:
- a. Capital projects other than environmental controls
 - b. Fixed operation and maintenance costs
 - c. Variable operation and maintenance costs
 - d. Fuel costs
 - e. Emission allowance costs
- A-4. Please see the attachment for each component of the total PVRR.

PVRR (\$M)

Unit(s)	Production Costs				Capital		Total
	Fixed O&M	Variable O&M	Fuel Costs	Emission Allowance Costs	Environmental Controls	Other	
Tyrone 3	4,277	2,788	18,765	0.2	3,614	3,709	33,153
Green River 3	4,252	2,760	18,769	0.2	3,568	3,791	33,140
Brown 3	4,138	2,711	18,810	0.2	3,522	3,880	33,060
Cane Run 4	4,138	2,711	18,810	0.2	3,522	3,880	33,060
Cane Run 6	4,001	2,730	19,088	0.2	3,217	3,935	32,972
Brown 1-2	3,901	2,771	19,426	0.2	2,805	4,077	32,980
Cane Run 5	3,901	2,771	19,426	0.2	2,805	4,077	32,980
Ghent 3	3,740	2,794	19,707	0.2	2,484	4,196	32,921
Ghent 1	3,740	2,794	19,707	0.2	2,484	4,196	32,921
Green River 4	3,740	2,794	19,707	0.2	2,484	4,196	32,921
Mill Creek 4	3,601	2,691	19,849	0.2	2,417	4,255	32,811
Trimble County 1	3,601	2,691	19,849	0.2	2,417	4,255	32,811
Ghent 4	3,601	2,691	19,849	0.2	2,417	4,255	32,811
Mill Creek 3	3,601	2,691	19,849	0.2	2,417	4,255	32,811
Ghent 2	3,601	2,691	19,849	0.2	2,417	4,255	32,811
Mill Creek 1-2	3,601	2,691	19,849	0.2	2,417	4,255	32,811

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
Drew Foley, Janet Overman, Gregg Wagner, Sierra Club and the
Natural Resource Defense Council**

Case No. 2011-00162

Question No. 5

Witness: Charles R. Schram

- Q-5. Refer to Table 2 on page 4 of Exhibit CRS-1. For each unit listed in Table 2, identify any cost not listed in Interrogatory 4 that is included in the PVRR of installing controls identified in Table 2. For each such cost, identify the total PVRR in 2011 dollars that was included for that cost.
- A-5. Please see the response to Question No. 4 in the column entitled "Capital – Environmental Controls."

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
Drew Foley, Janet Overman, Gregg Wagner, Sierra Club and the
Natural Resource Defense Council**

Case No. 2011-00162

Question No. 6

Witness: Charles R. Schram

- Q-6. Refer to Table 2 on page 4 of Exhibit CRS-1. For each unit listed in Table 2, state whether, in determining the PVRR of retiring and replacing capacity indentified in Table 2, each of the following options was included as replacing some or all of the capacity for that unit. For each option that was included, identify the amount of capacity that such option was assumed to replace, and the per unit of energy cost that was assumed for such option.
- a. Energy efficiency
 - b. Demand side management
 - c. Combined heat and power
 - d. Wind turbines
 - e. Solar
 - f. Hydroelectric
 - g. Construction of a new natural gas combined cycle facility
 - h. Purchase of power from an existing natural gas combined cycle facility
 - i. Purchase of an existing natural gas combined cycle facility
 - j. Power purchase agreements
- A-6. Please see the responses to KPSC-1 Question Nos. 18, 42 and 44. While there is no single input that equates to the “per unit of energy cost that was assumed for each option”, the details for demand-side and supply-side technologies are provided in the Companies’ 2011 Integrated Resource Plan (“2011 IRP”) filing.¹ Please refer to Volumes I and III of the 2011 IRP. Also, please see the detail provided in Exhibit CRS-1 Section 4.2 (including associated subsections) and Appendix C.

¹ *In the Matter of: The 2011 Joint Integrated Resource Plan of Louisville Gas and Electric Company and Kentucky Utilities Company*, PSC Case No. 2011-00140.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
Drew Foley, Janet Overman, Gregg Wagner, Sierra Club and the
Natural Resource Defense Council**

Case No. 2011-00162

Question No. 7

Witness: Charles R. Schram

- Q-7. Refer to Table 2 on page 4 of Exhibit CRS-1. For each unit listed in Table 2, identify any option not listed in Interrogatory 6 that, in determining the PVRR of retiring and replacing capacity identified in Table 2, was included as replacing some or all of the capacity for that unit. For each such option, identify the amount of capacity that such option was assumed to replace, and the per unit of energy cost that was assumed for such option.
- A-7. All options were addressed in the response to Question No. 6.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
Drew Foley, Janet Overman, Gregg Wagner, Sierra Club and the
Natural Resource Defense Council**

Case No. 2011-00162

Question No. 8

Witness: Charles R. Schram

- Q-8. Refer to Table 2 on page 4 of Exhibit CRS-1. For each unit listed in Table 2, state whether the PVRR of retiring and replacing capacity identified therein includes each of the following categories of costs. For each category, if the answer is yes, identify the total PVRR in 2011 dollars that was included for that cost.
- a. Transmission grid upgrades or additions
 - b. Decommissioning costs
 - c. Undepreciated book value
 - d. Replacement capacity
- A-8.
- a. No, transmission grid upgrades or additions are considered when evaluating detailed replacement capacity alternatives, which is beyond the scope of the LG&E 2011 Plan.
 - b. Decommissioning costs are not included.
 - c. The undepreciated book value does not affect the revenue requirements analysis for retired units, since the revenue requirements include recovery of the undepreciated book value for retired units.
 - d. The table below contains the PVRR associated with the system expansion units for each of the unit retirement cases.

Unit(s)	Replacement Capacity PVRR (\$M)
Tyrone 3	1,898
Green River 3	2,002
Brown 3	2,103
Cane Run 4	2,103
Cane Run 6	2,205
Brown 1-2	2,433
Cane Run 5	2,433
Ghent 3	2,604
Ghent 1	2,604
Green River 4	2,604
Mill Creek 4	2,680
Trimble County 1	2,680
Ghent 4	2,680
Mill Creek 3	2,680
Ghent 2	2,680
Mill Creek 1-2	2,680

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
Drew Foley, Janet Overman, Gregg Wagner, Sierra Club and the
Natural Resource Defense Council**

Case No. 2011-00162

Question No. 9

Witness: Charles R. Schram

- Q-9. Refer to Table 2 on page 4 of Exhibit CRS-1. For each unit listed in Table 2, identify any cost not listed in Interrogatory 8 that was included in determining the PVRR of retiring and replacing capacity identified therein. For each cost, identify the total PVRR in 2011 dollars that was included for that cost.
- A-9. All costs have been discussed in response to Question Nos. 4 and 8.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
Drew Foley, Janet Overman, Gregg Wagner, Sierra Club and the
Natural Resource Defense Council**

Case No. 2011-00162

Question No. 10

Witness: John N. Voyles, Jr.

- Q-10. Refer to page 1 of Exhibit JNV- 1. For each of the electric generating units at LG&E's Mill Creek generating station and for Trimble County Unit 1, identify the following emissions rates and amounts from such unit after the environmental controls that are proposed as part of Project 26 and 27 are completed.
- a. SO₂ lbs/mmBtu
 - b. SO₂ tpy
 - c. NO_x lbs/mmBtu
 - d. NO_x tpy
 - e. PM lbs/mmBtu
 - f. PM tpy
 - g. Mercury lbs/TBtu
 - h. Mercury pounds per year
 - i. HCl- lbs/mmBtu
 - j. HCl - tpy
 - k. CO₂ - tpy
 - l. SAM - lbs/mmBtu
 - m. SAM – tpy
- A-10. Emission rates for each pollutant vary with specific averaging periods. Please refer to Exhibit JNV-2, Appendix A for the targeted emissions limits used when considering control technology for each unit. The Companies intend to comply with the final EPA regulations that govern the emissions listed for the aforementioned pollutants. No environmental controls are proposed for CO₂ in Projects 26 and 27. See the responses to Question Nos. 12 and 23.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
Drew Foley, Janet Overman, Gregg Wagner, Sierra Club and the
Natural Resource Defense Council**

Case No. 2011-00162

Question No. 11

Witness: John N. Voyles, Jr.

Q-11. Identify any planned, anticipated, or assumed retirement dates for each of LG&E's electric generating units.

A-11. Please see the response to KPSC-1 Question No. 4.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
Drew Foley, Janet Overman, Gregg Wagner, Sierra Club and the
Natural Resource Defense Council**

Case No. 2011-00162

Question No. 12

Witness: John N. Voyles, Jr. / Gary H. Revlett / Charles R. Schram

- Q-12. Identify any actions that the LG&E 2011 Plan assumes LG&E will need to take to comply with any existing, pending, or anticipated regulation of CO2 emissions from LG&E's electric generating units.
- A-12. The regulations requiring the installation of the environmental controls contained in the LG&E 2011 Plan are shown on Application Exhibit 1 and Exhibit JNV-1. The regulations are discussed on page 2 of the testimony of Mr. Voyles, and on pages 2, 3 and 4 of the testimony of Mr. Revlett. Also, please see the response to KPSC-1 Question No. 2.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
Drew Foley, Janet Overman, Gregg Wagner, Sierra Club and the
Natural Resource Defense Council**

Case No. 2011-00162

Question No. 13

Witness: John N. Voyles, Jr. / Gary H. Revlett

- Q-13. Identify any actions that the LG&E 2011 Plan assumes LG&E will need to take as a result of the 1-hour SO₂ NAAQS.
- A-13. The regulations requiring the installation of the environmental controls contained in the LG&E 2011 Plan are shown on Application Exhibit 1 and Exhibit JNV-1. The regulations are discussed on page 2 of the testimony of Mr. Voyles, and on pages 2, 3 and 4 of the testimony of Mr. Revlett. Also, please see the response to KPSC-1 Question No. 40.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
Drew Foley, Janet Overman, Gregg Wagner, Sierra Club and the
Natural Resource Defense Council**

Case No. 2011-00162

Question No. 14

Witness: John N. Voyles, Jr. / Gary H. Revlett

Q-14. Identify any actions that the LG&E 2011 Plan assumes LG&E will need to take as a result of US EPA's reconsideration of the 2008 ozone NAAQS.

A-14. The regulations requiring the installation of the environmental controls contained in the LG&E 2011 Plan are shown on Application Exhibit 1 and Exhibit JNV-1. The regulations are discussed on page 2 of the testimony of Mr. Voyles, and on pages 2, 3 and 4 of the testimony of Mr. Revlett. Also, please see the response to KPSC-1 Question No. 40.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
Drew Foley, Janet Overman, Gregg Wagner, Sierra Club and the
Natural Resource Defense Council**

Case No. 2011-00162

Question No. 15

Witness: John N. Voyles, Jr. / Gary H. Revlett

- Q-15. Identify any actions that the LG&E 2011 Plan assumes LG&E will need to take as a result of US EPA's reconsideration of the 2006 PM_{2.5} NAAQS.
- A-15. The regulations requiring the installation of the environmental controls contained in the LG&E 2011 Plan are shown on Application Exhibit 1 and Exhibit JNV-1. The regulations are discussed on page 2 of the testimony of Mr. Voyles, and on pages 2, 3 and 4 of the testimony of Mr. Revlett. LG&E did not include in their 2011 Plan any actions pursuant to the possible EPA reconsideration of the 2006 PM_{2.5} NAAQS. At this time EPA has not proposed a new PM_{2.5} standard and they have clearly delayed their previous target date of January 2011 for this action. Also, please see the response to KPSC-1 Question No. 40.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
Drew Foley, Janet Overman, Gregg Wagner, Sierra Club and the
Natural Resource Defense Council**

Case No. 2011-00162

Question No. 16

Witness: John N. Voyles, Jr.

Q-16. Identify any actions that the LG&E 2011 Plan assumes LG&E will need to take as a result of existing, proposed, or anticipated Clean Water Act regulations.

A-16. The LG&E 2011 Plan does not address actions necessary for compliance with existing, proposed, or anticipated Clean Water Act regulations.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
Drew Foley, Janet Overman, Gregg Wagner, Sierra Club and the
Natural Resource Defense Council**

Case No. 2011-00162

Question No. 17

Witness: John N. Voyles, Jr.

Q-17. State whether the flue gas desulfurization systems at LG&E's Trimble County generating station were constructed using duplex stainless steel alloy 2205 or other duplex stainless steels.

A-17. The flue gas desulfurization systems at LG&E's Trimble County generating station were not constructed using duplex stainless steel alloy 2205 or other duplex stainless steels.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
Drew Foley, Janet Overman, Gregg Wagner, Sierra Club and the
Natural Resource Defense Council**

Case No. 2011-00162

Question No. 18

Witness: John N. Voyles, Jr.

Q-18. State whether the flue gas desulfurization systems at LG&E's Trimble County generating station have experienced problems with corrosion.

A-18. The flue gas desulfurization systems have not experienced any significant corrosion issues.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
Drew Foley, Janet Overman, Gregg Wagner, Sierra Club and the
Natural Resource Defense Council**

Case No. 2011-00162

Question No. 19

Witness: Charles R. Schram

Q-19. Identify the energy generated (in kWh or MWh) at each of LG&E's electric generating units in each calendar year during the period 2000-2010.

A-19. Please see the attachment.

Annual Electric Energy by Unit (2000-2010, Net MWh)

	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>
Brown 1	615,006	591,387	577,925	599,106	568,432	563,532	480,534	493,483	513,921	217,008	411,311
Brown 2	943,403	791,198	906,575	972,668	971,532	1,075,007	956,008	1,013,933	1,074,881	547,458	763,280
Brown 3	2,793,427	2,375,053	2,278,584	2,525,740	2,246,620	1,584,997	2,031,288	2,396,909	2,534,659	1,740,829	1,828,361
Brown 5	0	59,564	54,241	475	-1,161	122,928	30,777	19,823	2,340	2,380	8,061
Brown 6	20,557	3,351	102,829	15,696	10,767	172,114	97,500	88,563	21,817	36,780	48,131
Brown 7	24,229	48,009	84,941	14,034	20,684	156,711	99,276	51,599	33,143	26,632	46,851
Brown 8	44,764	38,203	34,815	4,782	-758	2,954	46,642	19,870	6,622	7,658	7,864
Brown 9	33,403	21,753	25,687	2,902	-14	1,636	27,105	11,236	3,411	1,509	5,196
Brown 10	25,401	13,605	18,418	3,579	772	1,683	20,966	5,334	1,722	2,370	4,365
Brown 11	16,340	8,079	10,471	406	636	1,854	13,070	4,458	677	4,551	8,529
Cane Run 4	923,971	882,739	966,836	971,150	813,652	1,052,063	961,053	1,105,274	1,044,031	950,924	927,129
Cane Run 5	940,250	1,008,640	1,078,881	1,038,855	897,296	1,091,048	1,087,296	1,043,893	886,232	956,126	1,110,383
Cane Run 6	1,350,265	1,408,314	1,022,287	1,544,055	1,514,046	1,542,731	1,530,907	1,395,319	1,482,371	1,340,828	1,222,086
Cane Run 11	373	339	122	38	33	143	1,179	312	4	210	228
Dix Dam	23,958	26,644	63,944	71,014	94,610	36,590	47,026	35,068	50,505	68,871	35,921
Ghent 1	3,153,430	3,661,109	3,223,170	3,448,042	3,304,417	3,488,619	3,374,404	2,915,043	3,598,899	2,867,588	3,295,876
Ghent 2	2,838,645	3,032,774	3,071,447	2,981,199	2,843,658	2,762,178	3,013,392	3,454,216	2,804,097	2,413,738	3,201,480
Ghent 3	3,210,133	2,918,140	3,093,384	2,265,509	2,829,972	3,086,506	2,967,905	2,358,308	3,262,152	3,182,388	3,431,840
Ghent 4	3,234,493	3,060,192	2,145,650	2,758,455	3,088,747	3,249,370	2,852,022	3,232,661	2,840,532	2,881,867	2,667,176
Green River 1	66,301	43,719	35,155	20,566	-885	0	0	0	0	0	0
Green River 2	57,626	34,917	29,574	18,825	-844	0	0	0	0	0	0
Green River 3	380,547	353,858	212,011	277,711	335,347	336,573	206,046	420,678	379,545	216,614	345,262
Green River 4	539,025	491,937	442,670	351,583	465,396	338,730	433,665	576,042	582,590	408,847	544,049
Haefling 1	358	-50	-136	-158	-144	-117	-130	-118	-115	-143	175
Haefling 2	234	-102	-124	-158	-146	-125	108	0	-123	-147	193
Haefling 3	205	-58	-130	-156	-149	-196	-101	-104	-129	-159	275
Lock 7	2	-13	-24	-13	-21	0	0	0	0	0	0
Mill Creek 1	1,769,257	1,822,807	1,785,523	1,970,334	1,847,144	2,223,638	1,975,638	2,163,431	1,994,139	2,121,020	2,009,037
Mill Creek 2	1,861,504	1,778,112	1,933,487	1,725,186	2,019,094	1,828,966	2,032,265	1,944,646	2,083,269	1,860,292	2,101,040
Mill Creek 3	2,506,522	2,722,661	2,386,458	2,706,297	2,297,199	2,969,840	2,842,591	2,805,103	3,002,860	2,805,833	2,914,876
Mill Creek 4	2,896,419	2,517,369	2,970,156	2,947,137	3,423,665	3,092,783	2,954,368	3,584,949	3,335,864	3,587,250	3,348,610
Ohio Falls	331,653	278,935	216,127	175,608	214,785	194,203	239,852	140,996	161,996	229,643	236,520
Paddy's Run 11	781	197	48	56	0	728	901	172	0	20	244
Paddy's Run 12	1,341	354	155	0	0	521	407	8	27	0	-107
Paddy's Run 13	0	48,923	108,288	30,235	31,448	134,487	89,512	66,288	6,552	1,262	14,729
Pineville	117,668	98,246	0	0	0	0	0	0	0	0	0
Trimble County 1	2,586,805	2,519,945	2,863,345	2,771,658	3,114,522	2,886,772	3,160,653	2,708,402	3,058,244	2,346,678	2,672,799
Trimble County 5	0	0	103,154	36,252	20,896	8,925	11,776	92,508	73,993	43,447	129,014
Trimble County 6	0	0	98,777	29,154	22,887	22,459	23,796	83,953	69,784	28,245	100,290
Trimble County 7	0	0	0	0	30,982	44,210	50,944	112,701	59,477	39,370	125,685
Trimble County 8	0	0	0	0	21,578	77,153	76,814	149,775	63,039	33,229	98,268
Trimble County 9	0	0	0	0	25,172	46,514	59,506	148,371	58,192	29,733	125,067
Trimble County 10	0	0	0	0	13,204	90,645	71,377	130,929	51,431	21,367	103,884
Tyrone 1	-1,536	-1,312	-1,507	-1,503	-1,423	-1,404	-1,203	-192	0	0	0
Tyrone 2	-1,539	-1,600	-1,519	-1,513	-1,428	-1,408	-1,208	-193	0	0	0
Tyrone 3	297,630	266,999	254,389	264,143	238,273	355,762	253,848	390,188	355,632	23,524	137,167
Waterside	1,165	130	43	0	0	0	0	0	0	0	0
Zorn	777	237	53	43	0	0	403	263	0	231	93

Note: Figures are net of auxiliary load. Negative figures indicate auxiliary load in excess of gross generation.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
Drew Foley, Janet Overman, Gregg Wagner, Sierra Club and the
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Case No. 2011-00162

Question No. 20

Witness: Charles R. Schram

Q-20. Identify the amount of energy (in kWh or MWh) that LG&E sold in off-system sales in each calendar year during the period 2000 - 2010.

A-20. Please see the attachment.

Louisville Gas & Electric - Off-System Sales Energy (MWh)

	<u>Sold to Third-Parties</u>	<u>Sold to KU</u>	<u>Total</u>
2000	5,003,784	1,830,489	6,834,273
2001	4,419,692	2,537,337	6,957,029
2002	3,935,792	3,326,207	7,261,999
2003	3,550,453	4,127,870	7,678,323
2004	3,528,952	4,290,258	7,819,210
2005	3,798,397	4,905,332	8,703,729
2006	2,479,631	5,142,200	7,621,831
2007	1,518,321	4,667,719	6,186,040
2008	2,826,853	5,056,906	7,883,759
2009	739,776	4,970,889	5,710,665
2010	534,961	4,709,981	5,244,942

Figures are per FERC Form 1 (pp. 310-311) and may contain small adjustments from prior years.

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Question No. 21

Witness: Charles R. Schram

- Q-21. Identify any LG&E's electric generating units that have been designated as a must-run unit by MISO, PJM, or any other Regional Transmission Organization. For each such unit, identify when it was designated a must-run unit and the period of time for which the unit was designated as must-run.
- A-21. The Companies are not members of a Regional Transmission Organization. Therefore, none of the Companies' electric generating units have been designated as a must-run unit by MISO, PJM, or any other Regional Transmission Organization.

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Question No. 22

Witness: Charles R. Schram

Q-22. Identify LG&E's actual electric energy sales in MWh and actual peak loads in MW for each of the years 2000 through 2010.

A-22. The table below contains the LG&E native load energy sales and actual peak demands.

Year	Sales (MWh)	Peak (MW)
2000	11,329,221	2,542
2001	11,377,267	2,522
2002	11,810,125	2,623
2003	11,503,350	2,583
2004	11,723,656	2,485
2005	12,291,958	2,754
2006	11,964,643	2,729
2007	12,657,607	2,834
2008	12,083,069	2,502
2009	11,405,157	2,524
2010	12,338,237	2,852

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Question No. 23

Witness: Charles R. Schram

- Q-23. Identify any CO₂ prices assumed in LG&E's 2011 Plan for each year of 2011 through 2040, and explain how any such CO₂ prices were factored into the LG&E 2011 Plan analysis.
- A-23. No CO₂ prices were used in the preparation of the LG&E 2011 Plan. The Companies have not prepared or caused to be prepared a forecast or projection of possible future CO₂ costs, taxes, or emission allowance prices. The Companies have not done so because there is no reasonable basis on which to forecast such possible costs, all such costs being purely speculative at this time. Please see the response to KPSC-1 Question No. 2.

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**Response to the First Set of Interrogatories of
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Case No. 2011-00162

Question No. 24

Witness: Charles R. Schram

Q-24. Identify the price of SO₂ and NO_x allowances that you assumed in LG&E's 2011 Plan for each year of 2011 through 2040.

A-24. Please see the response to KPSC-1 Question No. 46(c).

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**Response to the First Set of Interrogatories of
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Natural Resource Defense Council**

Case No. 2011-00162

Question No. 25

Witness: Charles R. Schram

- Q-25. Identify all of the supply-side and the demand-side resources that you considered as part of the LG&E 2011 Plan process.
- A-25. The results of the 2011 Integrated Resource Plan were the basis for the evaluation in the LG&E 2011 Plan filing. Please see the responses to KPSC-1 Question Nos. 18, 42 and 44.

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**Response to the First Set of Interrogatories of
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Case No. 2011-00162

Question No. 26

Witness: Charles R. Schram

Q-26. Identify the annual natural gas prices that you assumed as part of the LG&E 2011 Plan process for each year of 2011 through 2040.

A-26. The natural gas prices used in the preparation of the LG&E 2011 Plan were provided in response to KPSC-1 Question No. 45 pursuant to a Petition for Confidential Protection.

The Companies will disclose the redacted confidential information to any intervenor with a legitimate interest in such information and as required by the Commission, but only after such an intervenor has entered into a mutually satisfactory confidentiality agreement with the Companies.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
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Natural Resource Defense Council**

Case No. 2011-00162

Question No. 27

Witness: Charles R. Schram

- Q-27. Identify the annual coal prices that you assumed as part of the LG&E 2011 Plan process for each year of 2011 through 2040.
- A-27. The coal prices used in the preparation of the LG&E 2011 Plan were provided in response to KPSC-1 Question No. 45 pursuant to a Petition for Confidential Protection.

The Companies will disclose the redacted confidential information to any intervenor with a legitimate interest in such information and as required by the Commission, but only after such an intervenor has entered into a mutually satisfactory confidentiality agreement with the Companies.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
Drew Foley, Janet Overman, Gregg Wagner, Sierra Club and the
Natural Resource Defense Council**

Case No. 2011-00162

Question No. 28

Witness: Charles R. Schram

- Q-28. Identify the assumptions you used in each base case and sensitivity scenario that you modeled in the LG&E 2011 Plan process.
- A-28. The assumptions for the base case are contained in Exhibit CRS-1. Also see the response to Initial Request for Production of Documents of Drew Foley, et al., Question Nos. 3 and 26.

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**Response to the First Set of Interrogatories of
Drew Foley, Janet Overman, Gregg Wagner, Sierra Club and the
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Case No. 2011-00162

Question No. 29

Witness: Charles R. Schram

- Q-29. For each of the electric generating units at LG&E's Mill Creek generating station and for Trimble County Unit 1, identify the anticipated annual capital, maintenance, operating, and fuel costs LG&E expects to incur for each year of 2011 through 2040.
- A-29. Please see the attached information which is contained in the production cost models used in development of the LG&E 2011 Plan.

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	Capital				O&M				Fuel				
	Mill Creek 1	Mill Creek 2	Mill Creek 3	Trimble County 1	Mill Creek 1	Mill Creek 2	Mill Creek 3	Trimble County 1	Mill Creek 1	Mill Creek 2	Mill Creek 3	Mill Creek 4	Trimble County 1
2011	3,293	15,988	4,250	1,233	13,510	18,963	25,701	22,629	47,403	41,031	51,684	72,717	59,765
2012	12,890	61,613	8,990	1,257	19,945	13,750	21,739	26,984	48,148	54,798	66,464	78,203	73,834
2013	50,587	106,964	47,519	16,185	14,269	18,367	25,708	25,551	58,518	52,005	63,137	87,612	68,285
2014	91,220	15,739	120,571	59,458	34,127	42,979	27,563	52,850	57,129	55,310	73,802	63,344	76,153
2015	14,245	8,528	90,175	85,987	40,363	46,778	52,923	59,500	59,751	54,328	60,568	81,490	71,666
2016	8,822	4,131	4,692	9,743	44,191	48,591	59,078	62,069	58,358	62,058	78,118	90,612	84,696
2017	4,248	3,685	4,786	1,388	45,638	49,366	59,743	64,324	61,408	57,734	73,085	96,454	70,913
2018	3,783	3,758	1,416	1,416	46,400	50,777	61,813	65,022	60,194	64,157	81,134	94,434	87,776
2019	3,859	3,833	4,980	1,444	47,718	51,232	61,373	67,353	66,353	57,473	72,619	104,624	84,040
2020	3,936	3,910	5,079	1,473	48,145	53,090	64,698	68,140	58,659	68,336	86,507	100,984	93,907
2021	4,015	3,988	5,181	1,503	49,782	53,833	65,183	70,287	69,849	65,950	83,815	109,977	88,267
2022	4,095	4,068	5,284	1,533	50,464	55,214	67,274	69,749	67,833	72,542	91,931	98,682	100,292
2023	4,177	4,149	5,390	1,564	51,797	56,007	67,820	73,167	71,650	67,591	85,947	113,062	91,450
2024	4,260	4,232	5,498	1,595	52,534	57,473	70,094	73,786	64,186	68,544	87,053	101,383	95,591
2025	4,346	4,317	5,608	1,627	53,889	58,282	70,636	76,198	69,148	65,394	83,420	109,681	81,902
2026	4,433	4,403	5,720	1,659	54,641	59,785	72,926	76,750	65,052	69,573	88,492	102,949	97,446
2027	4,521	4,491	5,834	1,692	56,065	60,187	72,268	79,276	69,128	59,976	76,482	109,760	89,410
2028	4,612	4,581	5,951	1,726	56,414	62,222	75,950	79,953	59,782	69,812	88,934	103,645	97,714
2029	4,704	4,673	6,070	1,761	58,331	63,092	76,466	82,531	69,148	65,472	83,461	110,049	89,418
2030	4,798	4,766	6,191	1,796	59,146	64,714	78,957	81,743	65,052	69,562	88,605	94,550	97,446
2031	4,894	4,862	6,315	1,832	60,688	65,638	79,542	85,855	69,148	65,428	83,390	109,978	89,406
2032	4,992	4,959	6,442	1,869	61,553	67,348	82,235	86,577	65,243	69,781	89,070	103,864	97,714
2033	5,092	5,058	6,570	1,906	63,140	68,295	82,765	89,345	69,148	65,491	83,442	110,194	81,915
2034	5,193	5,159	6,702	1,944	64,021	70,051	85,499	90,040	69,148	69,598	88,781	103,678	97,446
2035	5,297	5,262	6,836	1,983	65,691	70,530	84,706	92,990	69,148	60,102	76,653	110,417	89,418
2036	5,403	5,368	6,973	2,023	66,097	72,905	89,023	93,749	59,782	69,839	89,116	104,079	97,714
2037	5,511	5,475	7,112	2,063	68,344	73,931	89,643	96,728	69,167	65,558	83,712	110,225	89,411
2038	5,622	5,584	7,254	2,104	69,299	75,831	92,570	95,846	65,052	69,660	88,892	95,053	97,446
2039	5,734	5,696	7,399	2,146	71,106	76,918	93,266	100,662	69,148	65,568	83,719	110,452	89,406
2040	5,849	5,810	7,547	2,189	72,119	78,915	96,325	101,490	65,090	69,086	88,577	101,483	97,478

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to the First Set of Interrogatories of
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Case No. 2011-00162

Question No. 30

Witness: John N. Voyles, Jr.

- Q-30. Identify any transmission grid upgrades or additions LG&E anticipates needing to make in order to avoid transmission grid reliability, stability, or voltage support problems as the result of the retirement of any of LG&E's existing electric generating units.
- A-30. Please see the response to Initial Request for Production of Documents of Drew Foley, et al., Question No. 17.