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July 29, 2011

RE: ***The 2011 Joint Integrated Resource Plan of Louisville Gas and Electric Company and Kentucky Utilities Company* – Case No. 2011-00140**

Dear Mr. DeRouen:

Please find enclosed and accept for filing the original and ten (10) copies of the supplemental response of Louisville Gas and Electric Company and Kentucky Utilities Company (collectively "the Companies") to the Commision Staff's Question No. 10 of their Second Information Request, dated June 29, 2011, in the above-referenced matter.

Also, enclosed are an original and ten (10) copies of a Petition for Confidential Protection regarding information on projected coal and gas base fuel costs. Therefore, the Companies are filing with the Commission one (1) copy of the analysis highlighting the information for which confidential treatment is sought.

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

Sincerely,

Rick E Lovekamp / DJH

Rick E. Lovekamp

cc: Parties of Record

LOUISVILLE GAS AND ELECTRIC COMPANY
KENTUCKY UTILITIES COMPANY

Supplemental Response to the Commission Staff's Second Information Request Dated June 29, 2011

Case No. 2011-00140

Question No. 10

Witness: Charles R. Schram

Q-10. Refer to the response to Item 38.b. on Staff's First Request. The request concerned whether any sensitivity analysis was performed on the capital and operating costs for the emission control equipment required for the Cane Run, Green River and Tyrone coal units in the scenario in which they were not retired.

a. The response refers to the Direct Testimony of Charles R. Schram ("Schram Testimony") in Case Nos. 2011-00161 and 2011-00162 and the "exhaustive sensitivity analysis" the IRP "assumed would be conducted" as part of the Environmental Cost Recovery evaluation in those cases "after key assumptions for the 2011 IRP were finalized." Provide the specific location in the Schram Testimony, or exhibits thereto, where the referenced sensitivity analysis can be found.

b. Exhibit CRS-1 to the Schram Testimony is the 2011 Air Compliance Plan for LG&E/KU. Table 92, on page 46 of Exhibit CRS-1 is a summary of the Present Value Revenue Requirement ("PVRR") analysis of installing environmental controls versus retiring and replacing coal units at the different LG&E/KU generating stations. Of the units that LG&E/KU are planning to retire, Green River 4 has the largest "negative" PVRR difference of $110 million. This difference equals less than 0.4 percent of the total PVRR shown for Green River 4. Explain how LG&E/KU determined that the PVRR analysis results are sufficiently robust to rely upon differences of this magnitude and less, for the other units planned for retirement, to make decisions to retire six existing generating units.

A-10.

a. Original Response: The following sensitivity analyses were performed as part of the Environmental Cost Recovery evaluation, but were not included in the referenced Schram Testimony. The Companies will plan to supplement this response on or before July 29, 2011 with the mentioned analysis.

    1. Fuel Price: The decisions to install new environmental controls were evaluated under various coal and natural gas price scenarios.
    2. Future Operation: For each of the units for which controls are recommended, the Companies computed the number of years the units would have to continue to operate to justify the cost of controls.
    3. Future Environmental Costs: For each of the units for which controls are recommended, the Companies computed the cost of potential future controls that could be incurred without changing the Companies' current recommendation.

   Updated Response: The formal sensitivity analyses on the future operation of coal units, potential future environmental costs, and the informal fuel price analysis began prior to the filing of the Company's Environmental Cost Recovery Plan. Because the Company was directionally aware of fuel costs for coal and natural gas, the formal fuel price analysis was not established and documented until later. The current sensitivity analyses, which include formal documentation of fuel price, future operation, and future environmental costs is attached. As further information becomes available, the Companies expect to continue the analyses.

b. The Companies evaluated the decisions to install new environmental controls under various coal and natural gas price scenarios. In evaluating negative differences in PVRR, the Companies primarily compared the difference in PVRR to the cost of controls. The difference in PVRR is roughly equal to the amount the cost of controls would have to decrease to justify installing controls.

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

Charles R. Schram

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 29th day of July 2011.

Tammy J. Elzy (SEAL)
Notary Public

My Commission Expires:

November 9, 2014

2011 Air Compliance Plan Sensitivity Analysis

PPL companies

Generation Planning & Analysis
July 2011

Table of Contents

1.0 Introduction

The analysis of the 2011 Air Compliance Plan ("Compliance Plan") was based on multiple inputs having a range of potential values. As a result, the Companies conducted various analyses to assess the reasonableness of its recommendations. These analyses are listed below and summarized in the following sections.

1. Fuel Price: The Companies evaluated the sensitivity of its recommendations to changes in fuel prices.
2. Future Operation: For each of the units for which controls are recommended, the Companies computed the number of years the units would have to continue to operate to justify the cost of the proposed controls.
3. Future Environmental Costs: For each of the units for which controls are recommended, the Companies computed the cost of potential future controls that could be incurred without changing the Companies' current recommendation.

New environmental controls were not recommended for the Cane Run, Green River, and Tyrone coal units. The analyses of controls for these units were based on the initial set of cost estimates from Black and Veatch[1]. Given the operating characteristics, age, and size of the units as well as the controls needed to comply with current environmental regulations, the cost of controls at Green River and Tyrone cannot be justified. Based on current cost estimates and the potential for future environmental control costs, this is also true for Cane Run. However, since a significant reduction in the cost of controls for Cane Run could impact the Companies' ultimate recommendation regarding Cane Run, the Companies began formally establishing and documenting estimates for Cane Run in July, using the recently constructed FGD system at Brown and the more refined 2011 Black & Veatch studies for Ghent, Mill Creek and Brown as a basis. Given the EPA timelines for complying with the new environmental regulations, the Companies focused its engineering resources on refining plans for the stations for which – based on initial cost estimates – new environmental controls are recommended. When more refined estimates for the cost of controls at Cane Run are available, this information will be incorporated in additional analysis.

2.0 Additional Analyses

2.1 Fuel Price

In the Compliance Plan analysis, the Companies – for each of the units for which a need for controls had been established – compared the difference in present value of revenue requirements ("PVRR") between (a) installing controls and (b) retiring the unit and replacing the capacity. These analyses are based on forecasts of coal and natural gas prices. If coal becomes relatively more expensive compared to gas, the options to install controls are less favored and retirement is more favored.

CONFIDENTIAL INFORMATION REDACTED

Table 1 summarizes the high sulfur coal and natural gas prices used in the Compliance Plan.

[1] For the units for which controls are recommended, cost estimates for controls are based on more refined engineering estimates from Black and Veatch included in the Compliance Plan.

CONFIDENTIAL INFORMATION REDACTED

Table 1 – Coal and Natural Gas Prices ($/MMBtu)

	Compliance Plan	
Year	**High Sulfur Coal**	**Natural Gas**
2011	[redacted]	
2012		
2013		
2014		
2015		
2016		
2017		
2018		
2019		
2020		
2021		
2022		
2023		
2024		
2025		

Among all units for which controls are recommended in the Compliance Plan, the difference in PVRR between installing controls and retirement is smallest for Brown 1-2 ($228 million in favor of installing controls). The average margin between coal and natural gas prices in the Compliance Plan would have to decrease by 42% to reduce the PVRR difference for Brown 1-2 to zero.

2.2 Future Operation

Because the development and impact of potential future environmental regulations is uncertain, the Companies computed the number of years the units for which controls are recommended would have to continue to operate to justify the cost of controls. For each unit, this number of years was computed using an iterative process. In each iteration, the PVRR of the 'retire and replace capacity' case was compared to the PVRR of a modified version of the 'install controls' case that assumed that the unit with controls would be retired several years after controls were initially added. In the iterative process, the retirement year for the units with controls was increased until the difference in PVRR between the cases was close to zero. Table 2 summarizes the results of this analysis as well as the projected end of each unit's economic life based on a 2007 life assessment study[2]. For each of the units for which controls are

[2] The projected end of the economic life of each unit is uncertain. Ultimately, the actual life of a unit is based on the way the unit is operated and maintained. The Companies believe that continuing a prudent level of ongoing maintenance and investment at its remaining generating units will ensure the ongoing reliable operation of the units and minimize the potential for a significant mechanical failure. Trimble County 1, Mill Creek 3-4, and Ghent 3-4 are being maintained to ensure that, year over year, a minimum 30-year remaining useful life is expected. Mill Creek 1-2, Brown 1-3, and Ghent 1-2 are being maintained to ensure that, year over year, a minimum 20-year remaining useful life is expected. Clearly, the number of years each of the units would have to operate to justify the cost of controls is less than that unit's life expectancy based on the way the units are being maintained.

recommended, the year through which the unit would have to operate to justify the cost of controls is earlier than the projected end of the unit's economic life.

Table 2 – Year through which Unit Would Have to Operate to Justify Cost of Controls

Unit	Year through which Unit Would Have to Operate to Justify Cost of Controls	Projected End of Economic Life Based on 2007 Life Assessment Study
Tyrone 3	N/A	2018
Green River 3	N/A	2018
Brown 3	2019	2026
Cane Run 4	N/A	2018
Cane Run 6	N/A	2023
Brown 1-2	2021	2026
Cane Run 5	N/A	2022
Ghent 3	2020	2041
Ghent 1	2021	2026
Green River 4	N/A	2018
Mill Creek 4	2023	2042
Trimble County 1	2018	2050
Ghent 4	2018	2044
Mill Creek 3	2021	2038
Ghent 2	2018	2027
Mill Creek 1-2	2024	2026

The Companies believe that stricter limits on the emission of CO_2 could have major impacts on the entire utility industry, LGE/KU, and its customers. Potential CO_2 regulations could take many forms, but the EPA has indicated by the "Tailoring Rule" that it will impose a BACT approach, acknowledging at the same time there is no current technology to control CO_2 emissions. It is difficult to estimate the impact of this approach on individual generating units because it is currently unclear if, or when, commercially viable and scalable technologies will become available which could impose additional costs on fossil fueled generation fleets.

2.3 Future Environmental Costs

The Compliance Plan analysis considered estimates for potential future environmental costs related to cooling water intake structures (section 316(b) of the Clean Water Act) and wastewater discharge compliance; all of which will require capital investment within the next 10-15 years[3]. The Compliance Plan does not recommend (and therefore did not consider the cost of) SCRs for Brown 1-2, Ghent 2, or Mill Creek 1-2. Because more stringent NO_x emission reduction requirements in the future could require the construction of SCRs on some or all of these units, the Companies considered the cost of potential future controls and whether these costs could be incurred without changing the Companies' current recommendation. For these units, Table 3 summarizes the differences in PVRR between (a) installing controls and (b) retiring and replacing capacity as well as capital cost estimates and revenue

[3] Potential future environmental costs also include costs for capping ash ponds related to coal combustion residual regulations. However, these costs will be incurred regardless of whether a unit is retired.

requirements associated with new SCRs. The PVRR values are taken from the Compliance Plan analysis**Error! Reference source not found.**.

Table 3 – Difference in PVRR and Estimates of SCR Capital Costs ($M, $2011)

Unit	Base Case Difference in PVRR	SCR Capital Cost Estimate	PVRR of SCR and Associated O&M
Brown 1-2	228	154	195
Ghent 2	1,139	232	288
Mill Creek 1-2	1,022	194	260

Black and Veatch estimated the cost of SCRs for Ghent 2 and Mill Creek 1-2 to be $232 million and $194 million, respectively. The PVRRs of these capital costs and the associated incremental operating and maintenance costs assuming – conservatively – a 2018 in-service date are $288 million and $260 million, respectively. These values are notably lower than the differences in revenue requirements in Table 3 for these units.

In Table 3, Brown 1-2 has the smallest difference in PVRR. Black and Veatch estimated the cost of SCRs (in $2011) for Brown 1 and Brown 2 to be $59 million and $95 million, respectively. The PVRR of these capital costs and the associated incremental operating and maintenance costs assuming a 2018 in-service date is $195 million, which is less than the difference in PVRR for Brown 1-2. Because of their size, installing SCRs on Brown 1-2 would have a limited impact on the Companies' overall NOx emissions and would be the least desirable option for further reducing NOx emissions[4]. For these reasons, the likelihood of installing SCRs on Brown 1-2 is very low.

[4] Installing SCRs on Brown 1-2 would reduce NOx emissions by approximately 5%. Furthermore, based on the size of these units, a less-costly selective non-catalytic reduction control (SNCR) may be a viable alternative.

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PUBLIC SERVICE
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COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE 2011 JOINT INTEGRATED RESOURCE PLAN OF LOUISVILLE GAS AND ELECTRIC COMPANY AND KENTUCKY UTILITIES COMPANY	))))	**CASE NO. 2011-00140**

PETITION FOR CONFIDENTIAL PROTECTION

Louisville Gas and Electric Company ("LG&E") and Kentucky Utilities Company ("KU") (collectively "Companies") hereby petition the Kentucky Public Service Commission ("Commission") pursuant to 807 KAR 5:001, Section 7, and KRS 61.878(1)(c) to grant confidential protection for the items described herein, which the Companies seek to provide in supplemental response to the Second Information Request of Commission Staff No. 10. In support of this Petition, the Companies state as follows:

1. Under the Kentucky Open Records Act, the Commission is entitled to withhold from public disclosure commercially sensitive to the extent that open disclosure would permit an unfair commercial advantage to competitors of the entity disclosing the information to the Commission. See KRS 61.878(1)(c). Public disclosure of the information identified herein would, in fact, prompt such a result for the reasons set forth below.

2. The confidential information contained in the cited response includes the Companies' coal and gas base fuel costs. If the Commission grants public access to this information, LG&E and KU could be disadvantaged in negotiating fuel contracts in the future, and could also be disadvantaged in the wholesale energy market because fuel costs are important components of energy pricing. All such commercial harms would ultimately harm LG&E's and

KU's customers, who would have to pay higher rates if the disclosed information resulted in higher fuel prices or adversely impacted the Companies' off-system energy sales.

3. The information for which the Companies are seeking confidential treatment is not known outside of LG&E and KU, and is not disseminated within LG&E and KU except to those employees with a legitimate business need to know and act upon the information, and is generally recognized as confidential and proprietary information in the energy industry.

4. The Companies do not object to limited disclosure of the confidential information described herein, pursuant to an acceptable protective agreement, to intervenors with legitimate interests in reviewing the same for the purpose of participating in this case.

5. The Commission has given confidential treatment to projected fuel cost information in previous IRP cases. For example, see the Commission's letter to the Companies dated May 1, 2008, concerning the Companies' 2008 IRP case (Case No. 2008-00148); the Commission's letter to the Companies dated April 28, 2005, concerning the Companies' 2005 IRP case (Case No. 2005-00162); the Commission's letter to the Companies dated October 24, 2002, concerning the Companies' 2002 IRP case (Case No. 2002-00367); and the Commission's letter to the Companies dated March 6, 2000, concerning the Companies' 1999 IRP case (Case No. 99-430).

6. If the Commission disagrees with this request for confidential protection, it must hold an evidentiary hearing (a) to protect the Companies' due process rights and (b) to supply the Commission with a complete record to enable it to reach a decision with regard to this matter. Utility Regulatory Commission v. Kentucky Water Service Company, Inc., Ky. App., 642 S.W.2d 591, 592-94 (1982).

7. In accordance with the provisions of 807 KAR 5:001, Section 7, LG&E and KU are filing with the Commission one copy of the Confidential Information highlighted and ten (10) copies without the Confidential Information.

WHEREFORE, Louisville Gas and Electric Company and Kentucky Utilities Company respectfully requests that the Commission grant confidential protection to the information designated as confidential for a period of five years from the date of filing the same.

Dated: June 29, 2011

Respectfully submitted,

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Counsel for Louisville Gas and Electric Company and Kentucky Utilities Company

CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing Petition for Confidential Protection was served via U.S. mail, first-class, postage prepaid, this 29th day of June 2011, upon the following persons:

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