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July 8, 2005

VIA HAND DELIVERY

RECEIVED

JUL 08 2005

PUBLIC SERVICE
COMMISSION

Ms. Elizabeth O'Donnell
Executive Director
Kentucky Public Service Commission
211 Sower Boulevard
P.O. Box 615
Frankfort, KY 40602-0615

**RE: The 2005 Joint Integrated Resource Plan of Louisville Gas and Electric Company
and Kentucky Utilities Company**
Case No: 2005-00162

Dear Ms. O'Donnell:

Enclosed please find and accept for filing the original and seven (7) copies of the Response of Louisville Gas and Electric Company and Kentucky Utilities Company to the Commission Staff's Initial Data Request dated June 16, 2005, in the above referenced matter.

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

Sincerely,

Kent W. Blake

Enclosures

cc: Parties of Record

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

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JUL 08 2005

PUBLIC SERVICE
COMMISSION

In the Matter of:

The 2005 Joint Integrated Resource Plan of)
Louisville Gas and Electric Company and) Case No. 2005-00162
Kentucky Utilities Company)

RESPONSE OF
LOUISVILLE GAS AND ELECTRIC COMPANY
AND
KENTUCKY UTILITIES COMPANY
TO THE COMMISSION STAFF'S INITIAL DATA REQUEST
DATED JUNE 16, 2005

FILED: July 8, 2005

**LOUISVILLE GAS AND ELECTRIC COMPANY
KENTUCKY UTILITIES COMPANY**

CASE NO. 2005-00162

**Response to the Commission Staff's Initial Data Request
Dated: June 16, 2005**

Question No. 1

Responding Witness: Robert F. Thomson

- Q-1. Refer to Section 6 of the Integrated Resource Plan ("IRP") at pages 6-5 through 6-23. How much of the differences between the 2002 IRP demand forecasts and 2005 IRP demand forecasts are attributable to the change in the methodology used to convert a forecast of monthly energy sales to a projection of peak demand?
- A-1. The methodology change discussed in the 2005 IRP had the effect of changing the system load factor (the relationship between energy and peak load). In the 2002 IRP forecast, the annual load factor applying over the forecast period was 54%, on a combined-company basis. In the 2005 IRP forecast - based on observations of monthly load shapes over the last ten years - an annual load factor of 56% was applied. If the lower load factor from the prior forecast had been applied to the energy sales forecast in the 2005 IRP, the 2005 peak demand forecast would have been 219 MW higher, on average, over the period 2005 to 2009. Overall, the 2005 IRP forecast of peak demand is 453 MW lower over this period. The remainder of the difference in peak load between the 2002 and 2005 IRP forecasts - around 234 MW on average - is explained by the difference in energy sales between the forecasts. Energy sales in the 2002 IRP forecast were higher than in the 2005 IRP forecast, by an average of 1,102 GWh over the 2005-2009 period. Thus, the methodology change accounts for approximately half of the total difference in the projection of peak demand between the two forecasts.

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Question No. 2

Responding Witness: Robert F. Thomson

- Q-2. Refer to Section 6 of the IRP at page 6-14, which includes a comparison of the 2002 forecast of combined-company energy sales and actual weather-normalized energy sales for the years 2002, 2003 and 2004. Is it typical for the percentage difference between forecast sales and actual sales to increase as the years being compared get further out from the time when the forecast is prepared? Explain the response and include comparisons to previous forecasts which reflect LG&E/KU's prior experience.
- A-2. This can happen, however, it is not necessarily typical. The further out the forecast, the more uncertainty there is concerning economic and demographic conditions (among other things).

The tables below display the historical variances of recent forecasts for both LG&E and KU.

LG&E Comparison of Forecasts to Actual
Billed Energy Sales – Weather Normalized

	Actual	1999 Forecast	Delta Actual	2000 Forecast	Delta Actual	2001 Forecast	Delta Actual	2002 Forecast	Delta Actual
2000	11,289	11,315	(0.23)%						
2001	11,335	11,735	(2.4)%	11,529	(1.7)%				
2002	11,456	12,010	(4.6)%	11,812	(3.0)%	11,617	(1.4)%		
2003	11,655	12,169	(4.2)%	12,007	(2.9)%	12,057	(3.3)%	11,835	(1.5)%
2004	11,735	12,356	(5.0)%	12,174	(3.6)%	12,274	(4.4)%	12,084	(2.9)%

For LG&E, both the 1999 and 2000 Forecast variances increase through 2002 but then decline in 2003, only to increase in 2003 and 2004. The 2001 and 2002 Forecasts display increasing variance for the three year and two year comparisons. However, it should be pointed out that with a limited number of data points, more time is needed to draw any substantive conclusions about whether variances are necessarily increasing through time.

In terms of KU's 1999 Forecast variance, after an initial increase in 2001, the variance declines through 2004. A similar trend is displayed for the other forecasts as well.

**KU Comparison of Forecasts to Actual
Billed Energy Sales – Weather Normalized**

	Actual	1999 Forecast	Delta Actual	2000 Forecast	Delta Actual	2001 Forecast	Delta Actual	2002 Forecast	Delta Actual
2000	18,735	18,825	(0.5)%						
2001	18,639	19,273	(3.3)%	19,150	(2.7)%				
2002	19,114	19,744	(3.2)%	19,985	(4.4)%	19,559	(2.3)%		
2003	19,694	20,212	(2.6)%	20,475	(3.8)%	20,519	(4.0)%	19,931	(1.2)%
2004	20,458	20,716	(1.8)%	20,912	(2.2)%	21,071	(2.9)%	20,607	(0.7)%



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Question No. 3

Responding Witness: Robert F. Thomson

- Q-3. Refer to Section 7 of the IRP, page 7-15, which identifies key economic and demographic assumptions used in developing the IRP. The last bullet refers to a 2003 study by Hill & Associates, which predicts future increases in Western Kentucky coal production. Did the study address only Western Kentucky coal production or was that the only component of the study relied upon by LG&E/KU? Explain the response.
- A-3. The study addressed the entire U.S. LG&E/KU relied upon Western Kentucky coal production in forecasting Mine Power load.

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Question No. 4

Responding Witness: B. Keith Yocum

- Q-4. Refer to the 2005-2019 Energy Requirements and Demand Forecast in Volume II of the IRP, specifically the uncertainty analysis. In the event peak demand growth were to match the high peak forecast, what plans do LG&E/KU have for meeting such growth?
- A-4. On page 12 of the Optimal Expansion Plan Analysis in Volume III of the IRP, the High Case "C" of Table 4 addresses the plans for meeting the high peak forecast.

**Table 4
Load Sensitivity**

Load Forecast: Fuel Forecast:	Base Base	Low Base	High Base
Plan:	"A"	"B"	"C"
2004			
2005			
2006			
2007			
2008			
2009			2-148G
2010	1-TC2		1-TC2
2011		1-WVHy	
2012			
2013	1-148G	1-TC2	1-148G & 1-WVHy
2014	1-WVHy		1-148G
2015	2-148G		1-GFCU
2016	1-148G		
2017	1-148G		
2018	1-148G	1-148G	1-148G
2019	1-GFCU	1-148G	1-GFCU

The Companies utilize the Base case for planning purposes. However, the load forecast is updated annually and if it results in resource needs differing from the IRP, a new Expansion Plan optimization will be conducted with the new load forecast. This will enable the Companies to be better prepared if load continually comes in higher than forecasted.

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Question No. 5

Responding Witness: Robert F. Thomson

- Q-5. The U.S. Economy 25-Year Focus included in Volume II of the IRP is identified as "Summer 2003" and was prepared by Global Insight. How frequently does Global Insight develop a 25-year focus? Was this the most recent such document available to LG&E/KU at the time the forecasts included in the IRP were developed?
- A-5. Global Insight produces a 25-year Focus every six months. The one produced in the summer of 2003 was the most recent available when LG&E/KU were developing the forecast employed in the 2005 IRP.

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Question No. 6

Responding Witness: B. Keith Yocum

- Q-6. LG&E/KU recently filed the 2005 joint energy and peak demand forecasts in Case No. 2004-00507. Will these more recent forecasts impact the long-range resource plan contained in this IRP? Explain the response.
- A-6. As shown in the table below, the date TC2 is required (2010) would remain the same using either forecast. However, the first Combustion Turbine ("CT") would be required in 2009 with the new load forecast of 2005, and also the WV Hydro Purchase moves forward one year from 2014 to 2013. Additionally, instead of two CT's required in 2015, only one CT would be required. The acquisition plan for the balance of the study period remains the same.

Plan	IRP Plan 2004 Forecast	New Load 2005 Forecast
2004		
2005		
2006		
2007		
2008		
2009		1-148G
2010	1-TC2	1-TC2
2011		
2012		
2013	1-148G	1-WVHy
2014	1-WVHy	
2015	2-148G	1-148G
2016	1-148G	1-148G
2017	1-148G	1-148G
2018	1-148G	1-148G
2019	1-GFCU	1-GFCU

**LOUISVILLE GAS AND ELECTRIC COMPANY
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Question No. 7

Responding Witness: B. Keith Yocum

- Q-7. Refer to the 2005 Analysis of Reserve Margin Planning Criterion included in Volume III of the IRP.
- a. Refer to Table 1 on page 4. Explain why both the duration and time between for minor maintenance for the Mill Creek units and Trimble No. 1 are different from the rest of LG&E/KU's base load generating units.
 - b. Refer to Table 3 on page 9. Are there identifiable reasons for why the equivalent forced outage rates for the Smith units of Owensboro Municipal Utility are in the 13 to 15 percent range? If yes, provide the reasons.
 - c. Refer to page 10, which references the EPRI report titled "Cost Benefit Analysis of Power System Reliability Determination of Interruption Costs." Provide the date of the report and the 27 utilities that were surveyed.
 - d. Refer to page 19. Explain (1) why the results of the analysis suggest a reserve margin range of only 2 percent (12 to 14) and (2) why the upper end of the range was chosen as the target reserve margin for planning purposes.
- A-7. a. In 2000, KU and LG&E considered an initiative for their generating plants to move toward 24-month cycles between outages, with implementation beginning in the 2002 maintenance schedules. At that time, the two plants that were best equipped to handle the longer interval were Trimble County and Mill Creek. However, after a few years, LG&E determined that due to the age and condition of the Mill Creek units, the units perform better if there is a one-week outage between the 24-month cycles. Future planned outages will continue to be modified based on best practices and actual performance of the units.

- b. The modeled EFOR's for the Smith units reflect actual historical performance. Actual data for these units for the last several years are shown below:

YEAR	SMITH 1	SMITH 2
2000	13.98%	11.65%
2001	7.34%	14.51%
2002	21.04%	17.96%
2003	12.30%	14.58%
2004	15.56%	13.24%

- c. The EPRI report is dated 1990. However, the utilities which provided responses to EPRI were not specifically identified in the report.
- d. Refer to Table 9 on page 18 of the Reserve Margin Analysis report in Volume III of the IRP. The total number of times that the reserve margin is identified as economically equivalent significantly drops outside the 12-14% range. Maintaining the higher level in the range provides greater insurance and reliability for the Companies' ratepayers. Therefore the 14% reserve margin was selected.

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Question No. 8

Responding Witness: Irv H. Hurst

- Q-8. Refer to the Screening of Demand-Side Management ("DSM") Options in Volume III of the IRP.
- a. Refer to page 2. Explain how the LG&E/KU DSM Department selected 2.4 as the cut-off point in the preliminary DSM qualitative screening analysis.
 - b. Refer to pages 8 through 11, which discuss the DSM resources that passed the quantitative screening.
 - (1) Explain why LG&E/KU did not consider all 5 "California tests" in the quantitative screening of potential DSM programs.
 - (2) Since LG&E/KU evaluated potential DSM programs using only the Total Resource Cost and Ratepayer Impact Measure tests, how can the Companies be assured that all significant variables that could impact the evaluation of potential DSM programs have been considered?
 - (3) Explain the steps taken by LG&E/KU to minimize bias in the final selection of DSM programs to be considered for implementation.
- A-8.
- a. The DSM Department selected 2.4 as the cut-off point in the preliminary screening analysis of potential DSM programs based upon its assessment that these programs would achieve customer acceptance and have a reasonable chance of passing more detailed quantitative analysis. Selection of 2.4 as the cutoff resulted in a larger percentage (38%) of the options being carried forward for further evaluation, as compared to 24% in the 2002 IRP.
 - b.
 - (1) As part of the companies DSManager screening process, all five California tests were calculated and considered.
 - (2) The Companies believe that it would not be prudent to implement any programs that at a minimum do not pass the Participant Test and the Total Resource Cost Test (TRC). The Ratepayer Impact Measure (RIM) is in fact utilized in the decision process as the TRC combines the RIM and

Participant Test. In Kentucky, the TRC and Societal Tests are effectively identical as there are no currently accepted externalities which are included in the TRC to produce the Societal Test.

- (3) The Companies utilize a set of objective screening tools which have been historically accepted by the Commission and other interested parties. Research and ranking of options was conducted independently by personnel with major skill sets including technology, marketing and finance. Additionally, the cutoff point from the preliminary screening process was set at a level that resulted in nearly 40% of the potential options moving forward to the detailed analysis stage. The number of options selected for the full blown program design and evaluation phase was 50% greater than the 2002 IRP.

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Question No. 9

Responding Witness: Irv H. Hurst

- Q-9. Refer to Exhibit DSM-11, Assumptions and Results of Phase II Quantitative Screening Process. As a matter of policy, is bundling DSM measures that pass the screening process with measures that do not pass considered by LG&E/KU as a means of attempting to introduce a larger or broader menu of programs to customers? Explain the response.
- A-9. The Companies generally do not favor implementation of DSM measures that do not pass the screening process.

Measures are frequently bundled into programs to maximize implementation efficiencies.