# **COMMONWEALTH OF KENTUCKY**

## BEFORE THE

# PUBLIC SERVICE COMMISSION OF KENTUCKY

RECEIVED

JUN 05 2007

PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

APPLICATION OF KENTUCKY POWER COMPANY )
FOR AN ORDER APPROVING A PILOT REAL-TIME )
PRICING PROGRAM FOR LARGE COMMERICAL ) CASE NO. 2007-00166
AND INDUSTRIAL CUSTOMERS )

## KENTUCKY POWER COMPANY

RESPONSES TO ATTORNEY GENERAL'S FIRST SET OF DATA REQUESTS

June 5, 2007

KPSC Case No. 2007-00166 Attorney General's First Set of Data Requests Dated May 18, 2007 Item No. 1 Page 1 of 1

## **Kentucky Power Company**

#### REQUEST

Please reference the Foust testimony, at page 3, starting at line 4 through line 14

- A. Provide a detailed explanation, including all relevant determinants or decision-making reasons, for allowing program participants to choose the amount of load they are willing to have subject to real-time pricing.
- B. Does the company believe that allowing participants to choose the amount of load they are willing to have subject to real-time pricing will result in revenue erosion? If not, why?
- C. Does the company believe that allowing participants to choose the amount of load they are willing to have subject to real-time pricing will result in no participants subsidizing program participants? If not, why?

### RESPONSE

- (A) Allowing customers to choose the amount of load they are willing to have subject to realtime pricing was incorporated into the program to encourage customer participation. It allows customers the ability to experiment with their operations at a level of risk they are willing to accept. All customers have a different level of risk they are willing to accept and all customers' operations are different. Customers are in the best position to determine the level of risk and their ability to adjust their operations.
- (B) It is anticipated that customers that participate in any program would do so only if they benefit from participation in that program, thereby providing less revenues to the Company. Some customers could benefit even if they were not allowed to choose the amount of load subject to real-time pricing. Allowing customers to choose the amount of load subject to real-time pricing may encourage more customers to participate.
- (C) No. The Company does not believe that allowing participants to choose the amount of load they are willing to have subject to real-time pricing will result in non-participants subsidizing program participants. Non-participating customers will continue to pay the standard tariff rates established in the Company's last base rate case.

**WITNESS:** Larry C Foust

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## **Kentucky Power Company**

## REQUEST

Please reference the Foust testimony, at page 3, starting at line 16 through line 18.

- A. Please provide the total number of existing Q.P. and C.I.P.-T.O.D. tariff customers.
- B. Please provide a detailed explanation why the program is limited to only ten (10) customers.
- C. Does the company believe that limiting the program to ten (10) customer will result in a fair representation of the classes of customers under the Q.P. and C.I.P.-T.O.D. tariff? If so, why?
- D. Does the company believe that such a limited program will offer statistically significant results? If so, why?

#### RESPONSE

- (A) 106
- (B) Kentucky Power limited the number of participants in the pilot program to limit the amount of fixed expenses associated with the pilot program. Ten participants allow the Company to manually bill the participating customers rather than develop an expensive computer billing program that would be required for a large number of participants.
- (C & D) The Company is not attempting to achieve statistically significant load change results from this pilot. Each participant is expected to be unique in their desire and ability to shift load related to this tariff offering, therefore any attempt to utilize statistical sampling techniques during the pilot would be futile. Permitting nearly 10% of the eligible customers to participate should permit nearly all, if not all, customers that want to participate to do so.

WITNESS: Larry C Foust

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## **Kentucky Power Company**

## REQUEST

Please list any other electric utilities real-time pricing programs and pilots, which the company reviewed, and for the programs listed, provide:

- A. A summary of each program or pilot, which should include the design of same and if implemented, the overall financial affect on the customers;
- B. The information which the company reviewed from each other program or pilot in making the decision to propose this pilot;
- C. The determinants or decision making reasons for determining this pilot to be appropriate; and
- D. The modeling or analyses conducted in reaching the decision.

### RESPONSE

(A & B) The Company reviewed 4 programs; one from Public Service Company of Oklahoma in Oklahoma, one from FirstEnergy in Ohio and two from Duke Energy in Kentucky. Below are the website addresses containing descriptions of the programs.

https://www.psoklahoma.com/global/utilities/tariffs/Oklahoma/RTP 05 31 2005.pdf

http://dis.puc.state.oh.us/TiffToPDf/VRIPMLK3SBLS74YH.pdf

http://www.duke-energy.com/pdfs/DE-KY-Rate-RTP-M.pdf

http://www.duke-energy.com/pdfs/DE-KY-ratertp.pdf

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(C) The two main factors which shaped the design of the Company's program were the fact that market-based energy prices were much higher than Kentucky's tariff energy prices and the determination of customer baselines used in many programs is subject to manipulation. A review of the AEP zone locational marginal prices (LMP) for 2006 revealed that for over 90% of the hours the LMP prices were higher than the energy rates for Kentucky Power's QP and CIP-TOD tariffs. Also through experience with Public Service Company of Oklahoma's program and participation in PJM working group meetings, determination of customer baselines is subject to much discussion and manipulation. The Company's proposal therefore does not utilize customer baselines and only uses real time LMPs for customer designated usage.

(D) Attached is a file that analyzes the LMP's for 2006.

WITNESS: Larry C Foust

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# Kentucky Power Company Analysis of 2006 AEP Zone LMP Hourly Prices Compared to Kentucky Power's Average Realizations

	Day Ahead		Real Time	
Yearly Simple Average of AEP Zone LMP Hours >= \$75 Maximum	\$41.39090 393 \$248.30000	393		
KP QP Energy Charge Average Hours >= \$20.18820	20.18820 8310	94.86%	8183	93.41%
KP CIP - TOD Energy Charge Average Hours >= \$16.57744	16.57744 8608	98.26%	8430	96.23%

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# **Kentucky Power Company**

### REQUEST

Are there any equipment additions or modifications required to participants metering systems contemplated or anticipated under the pilot program? If so, please provide a detailed explanation of what types of additions or modifications are necessary along with the costs associated with such additions or modifications.

### RESPONSE

No changes to the customer's metering system are required to participate.

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KPSC Case No. 2007-00166 Attorney General's First Set of Data Requests Dated May 18, 2007 Item No. 5 Page 1 of 2

## **Kentucky Power Company**

#### REQUEST

Please reference the Foust testimony, at page 5, starting at line 5 through line 6.

- A. Please provide a detailed explanation of how real-time pricing information will be disseminated to participants.
- B. In addition to information regarding real-time pricing, what other information will be available to participants? (i.e., current or real-time consumption data, previous consumption data, daily, yearly or monthly consumption data or a running total)?
- C. Please provide a detailed explanation of when real-time pricing data will be posted for view/use by participants and when such pricing will take effect.
- D. Please provide a detailed explanation of why final settlement prices may be delayed several days.
- E. Based upon the last 12 calendar months, how much has final settlement prices deviated from real-time prices as listed by PJM?
- F. Base upon the last five (5) years, how much have final settlement prices deviated from real-time prices as listed by PJM?
- G. If the hourly prices are posted near the end of the business day, does the company believe that customers will be able to respond adequately to the pricing signal? If so, why?

#### RESPONSE

A. Kentucky Power's sister operating company, Public Service of Oklahoma, currently offers a real-time pricing program. The web-based system used to disseminate hourly prices to Oklahoma customers is known as the Customer Communications System (CCS). Kentucky Power plans to use CCS to provide Kentucky real-time customers with hourly pricing information. Real-time pricing customers can log into CCS using their ID/password to view the prices and/or elect to receive an e-mail containing the forecasted day-ahead hourly prices.

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- B. Kentucky Power plans to display the real-time customer's consumption data collected hourly from the revenue meter.
- C. PJM forecasts on a day-ahead basis the hourly price for electricity at 3000 points in the PJM system. The prices are referred to as Locational Marginal Pricing (LMP). The day-ahead LMPs are generally issued by 4pm every PJM business day. Day-ahead prices are posted every day of the year. Kentucky Power plans to provide a day-ahead hourly price to its real-time customers shortly after PJM releases their day-ahead LMPs. Every hour, PJM calculates the average LMP for the previous hour. Kentucky Power plans to calculate the average real-time price for the previous hour and overlay it on the day-ahead real-time price for that hour on CCS display. Generally around noon the next business day, PJM settles the previous day's LMPs. The settled LMP will be used to calculate the real-time price used for billing. CCS will be updated to reflect these prices.
- D. PJM does not make settlement hourly Locational Marginal Prices (LMPs) available until the business day following the operating hour. In the event that an operating hour occurs on a day preceding a weekend or preceding a holiday weekend where the holiday occurs immediately before or subsequent to a weekend, the delay in PJM posting the desired LMP(s) can be several days.
- E. AEP is not able to determine the frequency or magnitude of final PJM settlement LMP deviations versus the LMPs PJM initially posts on the first business day following an operating hour. However, through the stakeholder process, PJM has indicated that corrections to LMPs can and do occur.
- F. See the Company's response to AG 1st Set, Item No. 5E.
- G. As mentioned in Response C, the day-ahead LMPs are generally issued by 4pm every PJM business day. Kentucky Power plans to provide a day-ahead hourly price to its real-time customers shortly after PJM releases their day-ahead LMPs. This should give the customer an early indication of real-time hourly prices in advance. Whether a customer can respond adequately to the information depends largely on the individual customer's business operations and knowledge of the electrical energy market. The key is whether a customer can modify its operations on an hour-to-hour basis as real-time prices change in the current day.

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## **Kentucky Power Company**

### REQUEST

Please reference the Foust testimony, at page 5, starting at line 13 through line 23.

- A. Please provide a detailed estimate of the anticipated administrative costs of the program.
- B. Which of these costs are independent of the number of participants? Which of these costs are incremental costs that will be incurred based on the number of participants?
- C. What costs does the company expect to recover through the proposed administration fee?
- D. What costs does the company expect to recover through its base rates?
- E. As participants are to be charged for a portion of load they designate at their current tariff rate plus any portion of additional load they designate as subject to real-time pricing, does the possibility exist for over or under recovery from individual participants? If so, how does the company propose to allocate such over or under recovered funds?

#### RESPONSE

- (A) The Company has not prepared a detailed estimate of the anticipated administrative costs. Because the tariff is being offered at the direction of the Commission and as a pilot project with limited availability, the Company does not anticipate developing a detailed estimate until the Commission finally approves the project and its features.
- (B) Incremental costs for billing customers is dependent upon the number of customers participating. Other costs such as customer communication system improvements or program information materials would be independent from the number of customers participating.
- (C & D) The proposed administration fee was not set to recover any certain costs. It was set at a level which the Company felt would not discourage customers from participating in the program. Any costs that the Company over- or under-recovers will be deferred and the Company will seek an adjustment through a later proceeding.
- (E) No, the Company believes that individual participants will pay for the costs they cause the Company to incur. The current tariff rates are cost based and the price paid for usage under real-time pricing reflects the costs customers would incur if they purchased the electricity in the competitive market.

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## **Kentucky Power Company**

## **REQUEST**

Is there a point when the company believes the lack of adequate participation in the program would require its modification or cancellation (i.e., a point where the lack of participation would make the program unfeasible or unreasonably burdensome)?

### RESPONSE

The Company is unable to respond at this time, however any modifications or cancellation of the program would need the approval of the Commission.



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## **Kentucky Power Company**

### REQUEST

What steps or efforts will the company utilize to educate or otherwise inform Pilot participants on ways to reduce energy consumption or shift their load? Will these efforts be continuous and on going in nature?

### **RESPONSE**

Customers that are eligible to participate in the program are large sophisticated users of electricity and usually employ energy managers to best match their company's operations with the Kentucky Power's rate offerings. The Company does not have the basis to inform customers of their optimal operational strategy.

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# **Kentucky Power Company**

### REQUEST

Please describe the anticipated demographics of the expected pilot program participants (i.e., industry type, size, location, etc.)

### RESPONSE

The Company does not know what customers will participate in the program. However the type of customers that make up the QP and CIP-TOD tariffs include, among other types, coal mining, chemicals and petroleum, retail stores, hospitals, electric, gas and sanitary facilities, primary metals and food, textiles and apparel.

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# **Kentucky Power Company**

## REQUEST

Did the company consider splitting the program costs between ratepayers and shareholders?

## RESPONSE

No. The Company believes that mandated programs should be funded by ratepayers.

WITNESS: Errol K Wagner, Larry C Foust

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## **Kentucky Power Company**

### **REQUEST**

What type of communication technology will be deployed as part of the pilot to monitor customers' electrical usage? Is the communication technology to be utilized failsafe with no possibility of error? If not, what are the precautions undertaken by the company to eliminate any possible errors?

#### RESPONSE

Customer's electrical usage information will be collected by Kentucky Power hourly via a telephone line or cellular phone by its interval usage metering interrogation and validation system (MV90). The stored usage interval data is accessed by the Customer Communications System (CCS) for presentation to the customer. Meters and communications system can fail, interrupting the availability of usage information. Interval data meters are designed to store information for about 33 days, which can be accessed when communications are re-established. This information will then be available for customer viewing. Both MV90 and CCS have been considered business critical systems for which disaster recovery schemes have been designed.

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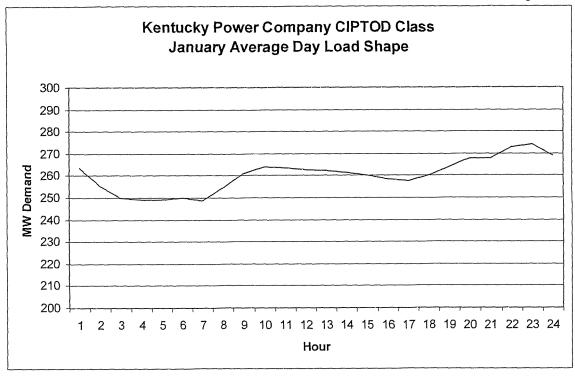
# **Kentucky Power Company**

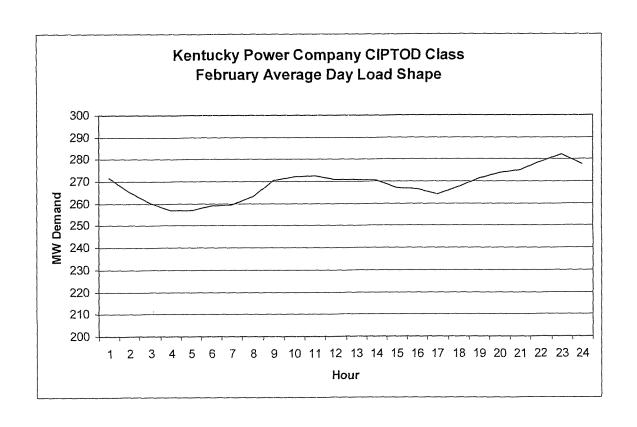
### **REQUEST**

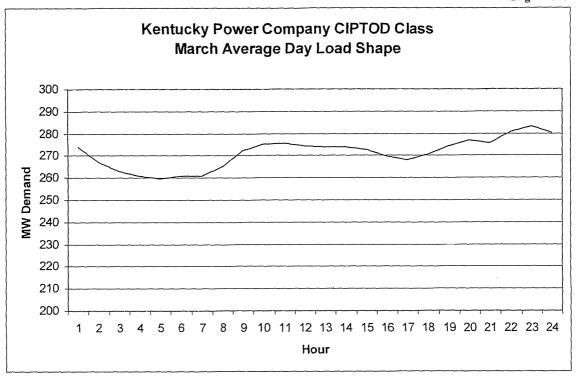
Please provide a graph, for each month of the year, demonstrating the average daily usage on the hour for all 24 hours for: 1) Q.P. tariff customers and 2) C.I.P.-T.O.D. customers. (This should be interpreted to mean that each graph will depict the average for all days of that month and normalized over a 30-year period.)

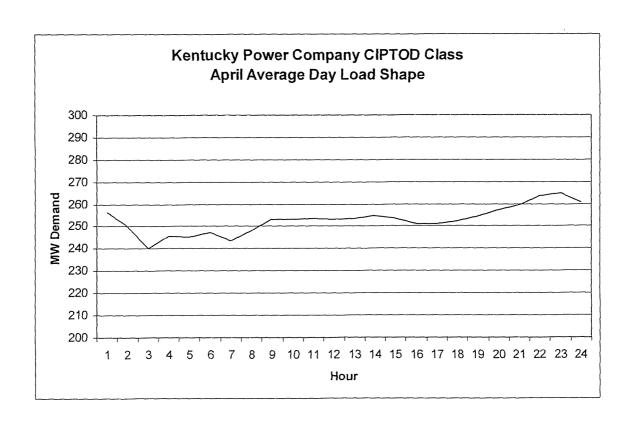
### RESPONSE

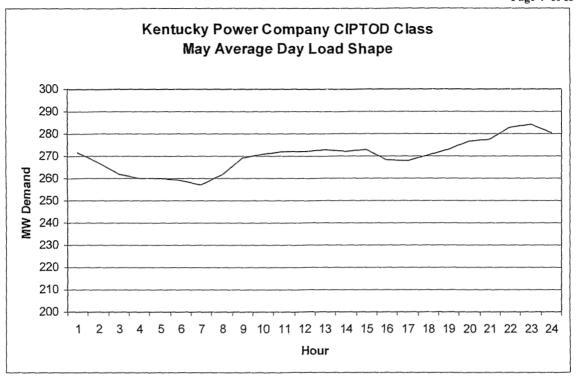
The attached document contains the requested graphs. Values represent 2006 total class usage at the meter. 30-year normalized values are not available, as no weather normalization of demands is regularly performed for these classes.

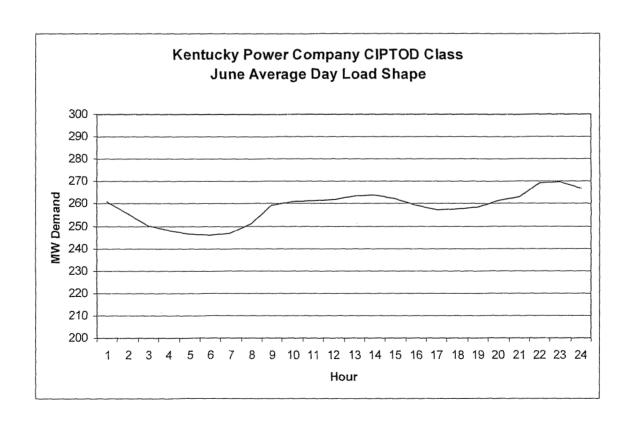


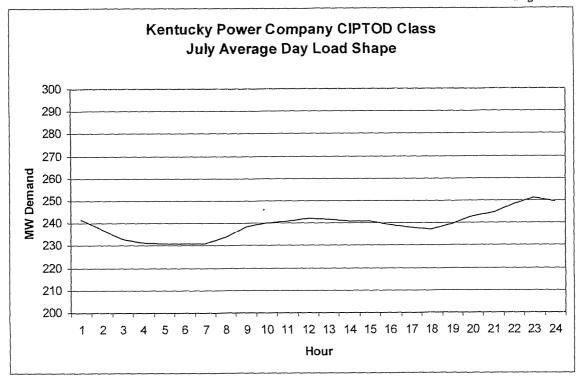


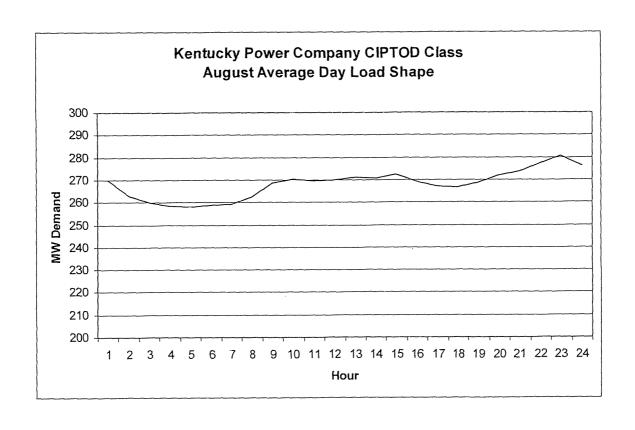


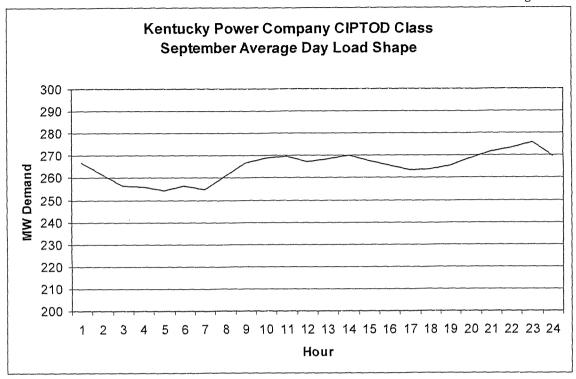


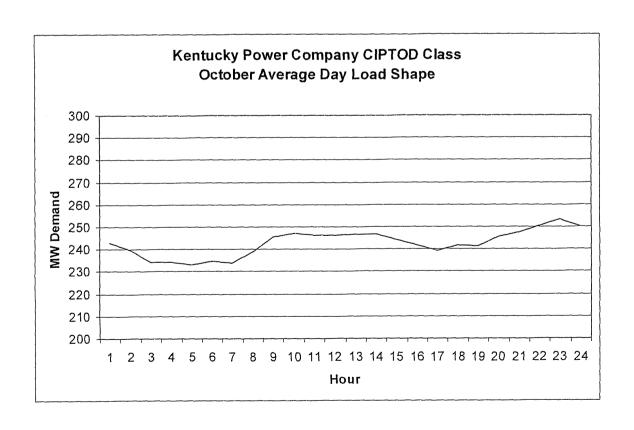


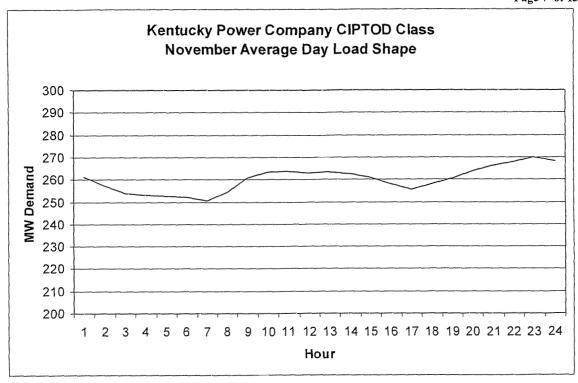


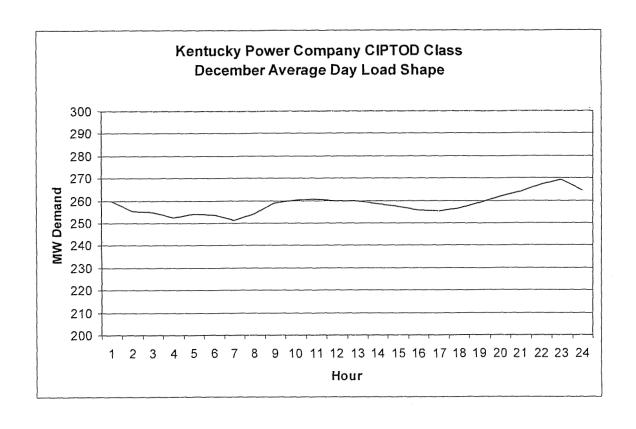


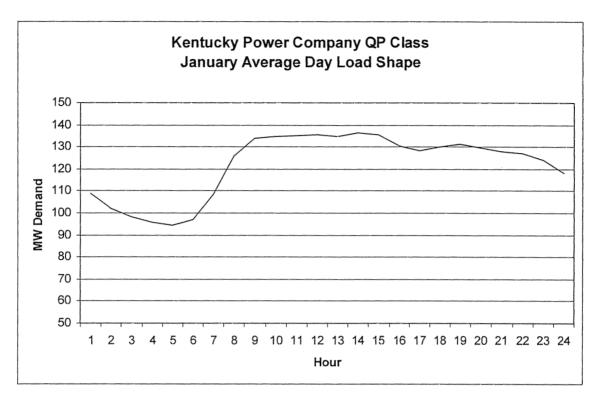


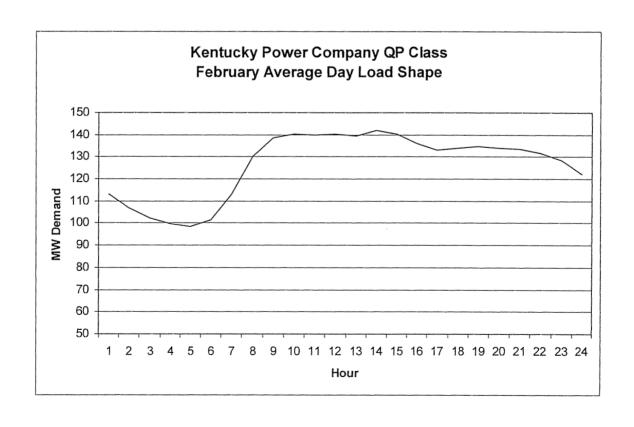


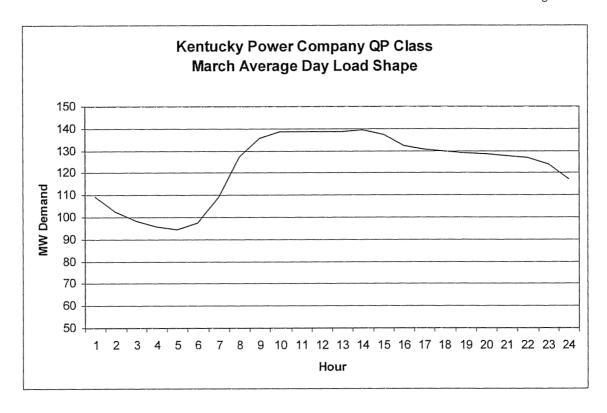


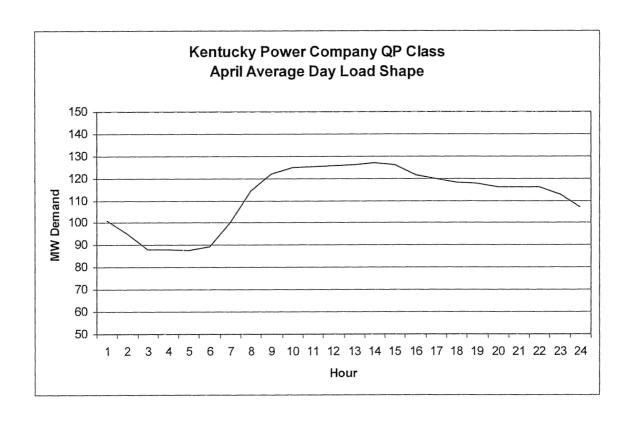


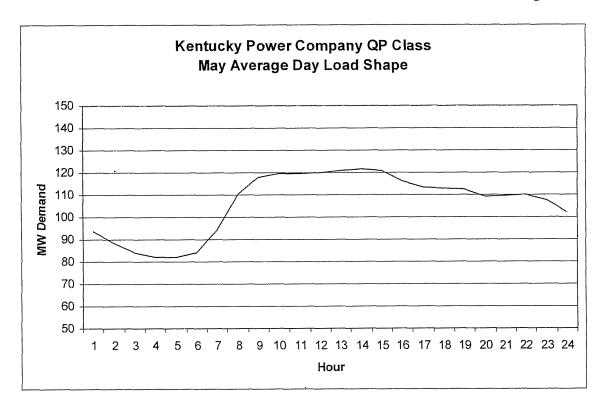


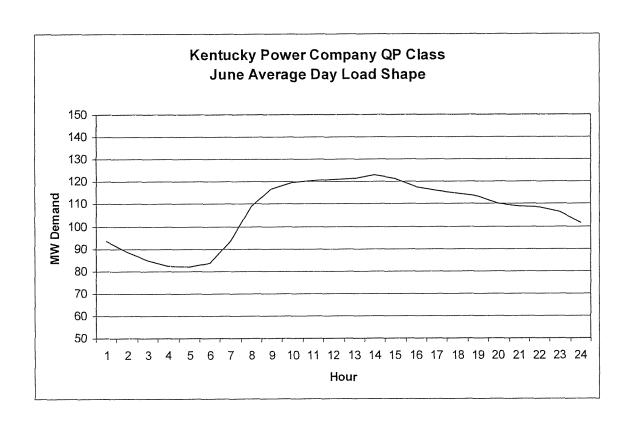


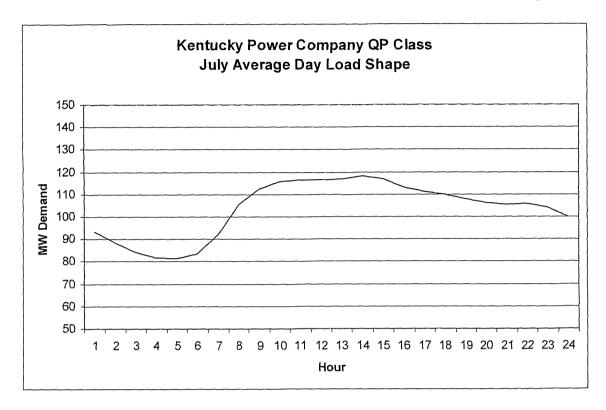


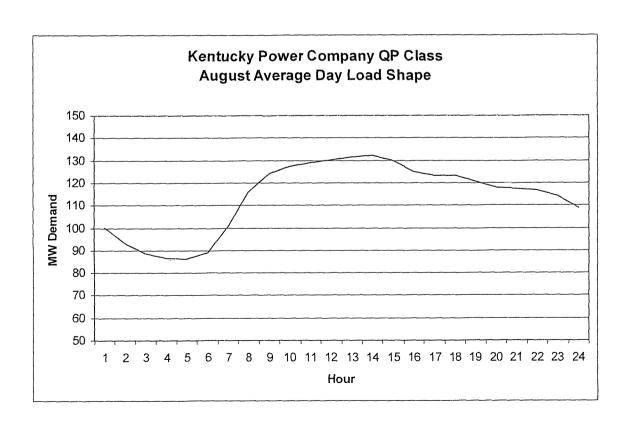


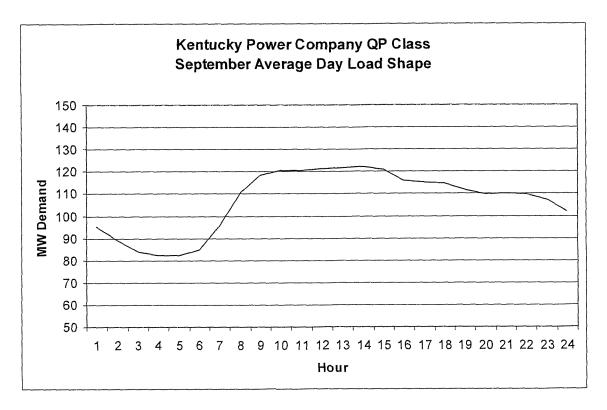


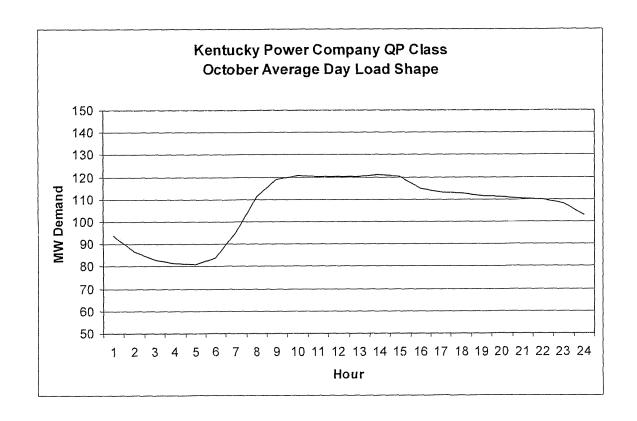


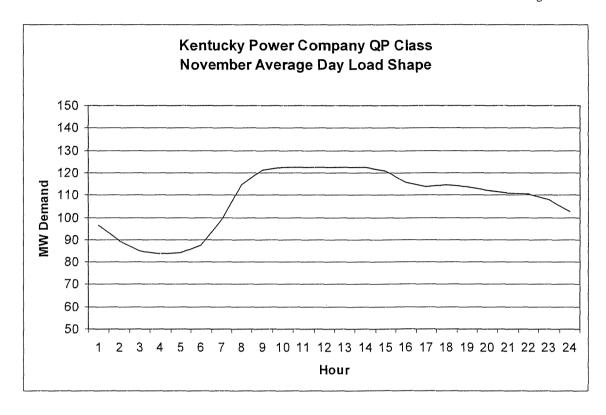


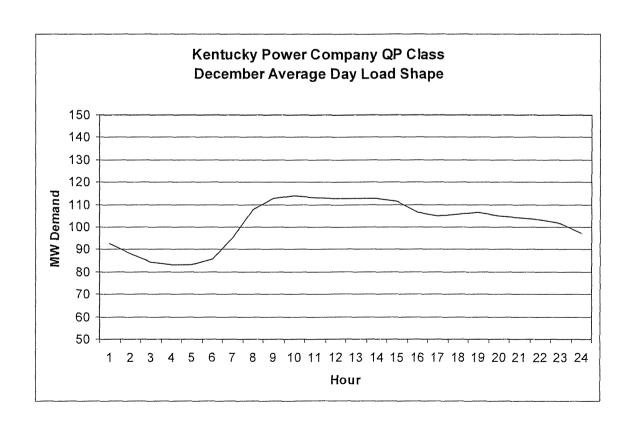












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# **Kentucky Power Company**

## **REQUEST**

Please provide a graph, for each month of the year, demonstrating the projected or anticipated change in the average daily usage ont he hour for all 24 hours for: 1) Q.P. tariff program participants and 2) C.I.P. -T.O.D. program participants.

#### RESPONSE

Kentucky Power Company has not projected the change in usage that may occur as a result of this tariff offering.

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# **Kentucky Power Company**

## **REQUEST**

What type of demand reduction does the company hope to obtain from this program(i.e., reductions in peak demand, base demand, or both)? Which type of reduction is more important to the company and why?

### **RESPONSE**

The Company hopes to reduce its peak demand. A reduction in the peak demand utilizes the Company's existing facilities more efficiently and delays the need for additional facilities.

### COMMONWEALTH OF KENTUCKY

### BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

STATE OF OHIO

CASE NO. 2007-00166

COUNTY OF FRANKLIN

### **AFFIDAVIT**

Larry C. Foust, upon first being duly sworn, hereby makes oath that if the foregoing questions were propounded to him at a hearing before the Public Service Commission of Kentucky, he would give the answers recorded following each of said questions and that said answers are true.

Larry C. Foust

Subscribed and sworn before me by Larry C. Foust this May of My, 2007.

CATHERINE HURSTON Notary Public, State of Ohio My Commission Expires 11:15/2009

Notary Public

My Commission Expires