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**APR 27 2009**

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April 27, 2009

**HAND DELIVERED**

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**RE: P.S.C. Case No. 2008-00408**

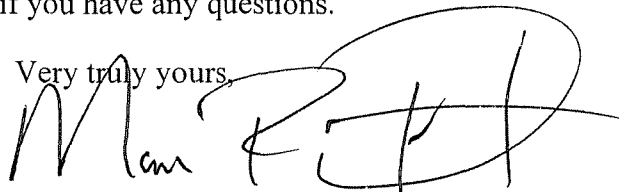
Dear Mr. Derouen:

Enclosed please find and accept for filing the original and nine copies of Kentucky Power Company's responses to the Staff's April 13, 2009 Data Requests promulgated to Kentucky Power.

Copies are being served today by United States mail, postage prepaid, on all persons on the attached service list.

Please do not hesitate to contact me if you have any questions.

Very truly yours,



Mark R. Overstreet

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APR 27 2009

**PUBLIC SERVICE  
COMMISSION**

**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE**  
**PUBLIC SERVICE COMMISSION OF KENTUCKY**

**IN THE MATTER OF**

**CONSIDERATION OF THE NEW FEDERAL )  
STANDARDS OF THE ENERGY ) ADMINISTRATIVE  
INDEPENDENCE AND SECURITY ACT OF ) CASE NO. 2008-00408  
2007**

**KENTUCKY POWER COMPANY**  
**RESPONSES TO COMMISSION STAFF'S SECOND SET OF DATA REQUESTS**

**April 27, 2009**





## **Kentucky Power Company**

### **REQUEST**

Refer to Kentucky Power's response to Staff's Initial Data Request; Item 63 [should be 64]. Kentucky Power states that the IRP regulation is not explicit that cost-effective demand-side resources be given priority status; however, priority status is implied. Explain whether Kentucky Power believes the IRP regulation should be revised to more explicitly state that cost-effective demand-side resources shall be given priority status.

### **RESPONSE**

Kentucky Power does not believe that such a revision is appropriate as it would require utilities to implement a minimally cost-effective demand-side project where even greater efficiencies can be achieved by implementing a supply-side project. As Mr. Wagner stated on page 18, line 10 of his January 12, 2009 testimony in this proceeding, KPCo believes cost-effective resources, whether demand-side or supply-side, should compete on an even playing field.

**WITNESS:** Errol K. Wagner





## Kentucky Power Company

### REQUEST

Refer to Kentucky Power's response to Staff's Initial Data Request, Item 65, in which Kentucky Power discusses American Electric Power Company's ("AEP") goal of having 1,000 MW of demand-reduction resources in place by 2012 and an energy-reduction goal of 2,250 GWh annual in the same period. Explain how it was determined that Kentucky Power's share of AEP's demand reduction would be 37 MW's and its share of energy reduction would be 84 GWh?

### RESPONSE

Both the 37MW and 84GWh goals are the prorated portions of the larger system goals. The 1,000MW demand reduction goal was prorated on the basis of the average of the following three bases: maximum annual peak demand, maximum summer peak demand, and annual energy consumption. The energy goal, developed subsequent to the demand goal, is simply the prorated share of annual consumption.

It should be emphasized that attainment of the goals is contingent upon the prospective programs meeting cost-effectiveness criteria and Commission approval.

**WITNESS:** Errol K Wagner



## **Kentucky Power Company**

### **REQUEST**

Refer to Kentucky Power's response to Staff's Initial Data Request, Item 66. Kentucky Power lists its DSM programs and provides the annual kWh saved by each program.

- a. Are there additional DSM programs in place for other AEP subsidiary companies that Kentucky Power may consider?
- b. If the answer to (a) above is yes, identify and explain each program. Include in the response whether obstructions or problems exist in Kentucky that make Kentucky Power hesitant to institute the programs in Kentucky.

### **RESPONSE**

- a. Yes.
- b. In addition to those Energy Efficiency (EE) and Demand Side Management (DSM) programs cited in Kentucky Power Company's response to Staff's Initial Data Request, AEP's other subsidiary Operating Companies currently manage or will soon be implementing several other EE/DSM programs across AEP's multi-state territory. They include:
  - Commercial Solutions - Targets commercial customers other than local government entities and public schools that do not have the in-house capacity or expertise to: 1) identify, evaluate, and undertake efficiency improvements; 2) properly evaluate EE proposals from vendors; and/or 3) understand how to leverage their energy savings to finance projects. Incentives are paid to targeted customers for certain eligible EE measures installed in new or retrofit applications which result in verifiable demand and energy savings. (Southwestern Electric Power -Texas, AEP Texas Central, AEP Texas North)
  - Energy Efficiency for Not-for-Profit Agencies Standard Offer - Targets commercial Not-for-Profit (NFP) organizations that provide various services to Hard-to-Reach (HTR) customers. Incentives are paid to participating organizations for certain eligible EE improvements made to their administration facilities, which result in verified demand and energy savings. The improvements reduce operating costs by making the facilities more energy efficient and result in greater resources being made available to HTR clients. Request for Proposals are submitted by NFP organizations and evaluated on a first-come, first-served basis until the annual program

budget is fully reserved. (Southwestern Electric Power -Texas, AEP Texas Central, AEP Texas North)

- **Energy Efficiency for Cities** - Provides assistance and financial incentives to incorporated city and local governments for installation of new or replacement light-emitting diode (LED) measures for traffic signals, crosswalk signals and building exit lighting. Incentives are paid based on deemed savings (i.e., engineering-based calculations) from the installed energy efficiency measures. Incentives are paid directly to customers after the project is completed and verified. (Public Service Oklahoma)
- **Load Management Standard Offer** - Targets large commercial/industrial customers which meet or exceed a specified demand (kW) threshold and have an Interval Data Recorder (IDR) meter. Incentives are paid based on verified demand savings for metered demand (kW) reduction of participating customers who have identified interruptible load that can be curtailed on short notice. Incentives are paid directly to contractors or customers. (Southwestern Electric Power – Texas and Arkansas, AEP Texas Central, AEP Texas North)
- **Higher Education Loan Energy Audit** - The Oklahoma Department of Commerce administers the program to provide financial assistance to eligible institutions of higher education in planning, design, development and implementation of energy efficiency measures in buildings, facilities, and related complexes. The Energy Audit component provides for utility-grade professional energy audits to enable those higher education institutions to identify and prioritize areas of greatest need for energy efficiency improvements and enable participation. Incentives are offered to offset the cost of the energy audit, provided that action is taken by the customer to implement cost effective energy efficiency measures as a result. The program is evaluated to determine the program impacts, including energy savings (kWh) and demand reduction (kW), and program value to customers. (Public Service Oklahoma)
- **CitySmart & Schools Conserving Resources** - Targets public school districts and cities, respectively, to provide incentives for installation of qualifying measures in new or retrofit applications. Incentives are paid to participating customers for eligible measures which result in verifiable demand and energy savings. The program facilitates the identification of potential demand and energy savings opportunities, general operating characteristics, long range energy efficiency planning, and overall measure and program acceptance by the targeted customer participants. (Southwestern Electric Power -Texas, AEP Texas Central, AEP Texas North)
- **C&I Prescriptive Lighting** - Provides financial incentives to all commercial and industrial customers for installation of qualifying new high efficiency lighting systems in a non-residential facility in either a new construction or retrofit application. Prescriptive programs work through existing market channels to affect installation of targeted technologies. Incentives are paid based on prescribed energy savings associated with installed energy efficiency measures. (To be implemented in AEP Ohio 2nd quarter 2009)

- Commercial and/or Industrial Standard Offer - Provides monetary incentives for a variety of qualifying retrofit measures including, but not limited to, the installation of chillers, motors, heating/ventilation/air conditioning, lighting, and window tinting/shading. Incentives are paid based on verified energy (kWh) and demand (kW) savings resulting from the installed energy efficiency measures. Facilities must have a maximum demand of at least 100 kW. Incentives are paid directly to contractors, but larger customers may participate as a contractor in the program. (Public Service Oklahoma, Southwestern Electric Power –Texas and Arkansas, AEP Texas Central, AEP Texas North. AEP-Ohio proposes a similar program called the C&I Custom Program)
- Energy Star® Appliances - Provides financial incentives for the purchase of qualifying new appliances with an Energy Star® rating that reduce customer energy costs and usage for residential and small commercial customers (less than 100 kW demand), such as heat pumps, central air conditioners, and room air conditioners. The program targets the existing retrofit market only. Incentives are paid directly to customers as inducements to purchase higher efficiency air conditioners and heat pumps. Program impacts for demand and energy savings will be determined by deemed savings. (Public Service Oklahoma, Southwestern Electric Power–Arkansas)
- Energy Star® New Homes - Targets primarily homebuilders and consumers. Incentives are paid to homebuilders who construct Energy Star®-qualified homes and to independent home energy raters who verify that energy efficiency features are install in the homes. New homes must meet Energy Star® New Home standards, which require homes be at least 15% more energy efficient than homes built to 2004 International Residential Code, and must meet US EPA guidelines. (Public Service Oklahoma, AEP Texas Central)
- Hard-to-Reach Standard Offer Program - Targets residential customers with household incomes at or below 200% of federal poverty guidelines. Incentives are paid to participating contractors for verifiable demand and energy savings generated by installing qualifying measures in retrofit applications. Incentives are higher for work performed in historically under-served counties to encourage activity in these areas. Deemed savings values are accepted as measured and verified savings for submitted projects. (Southwestern Electric Power -Texas, AEP Texas Central, AEP Texas North)
- Residential Standard Offer - Program targets residential customers. Program incentives are higher for work performed in historically under-served counties to encourage activity in these areas. Incentives are paid to contractors for eligible measures installed in retrofit applications, which result in verified demand and energy savings. Deemed savings values are accepted as measured and verified savings for submitted projects. (Southwestern Electric Power -Texas, AEP Texas Central, AEP Texas North)

- Appliance Recycling - Provides for the pick-up and disposal of second, inefficient, working refrigerators and freezers for residential and commercial customers. Appliance must be used on a full-time basis as a secondary unit. Primary units that have been recently replaced are not eligible. In addition to free pick-up and recycling, the customer may receive an incentive check. (Southwestern Electric Power -Texas, AEP Texas Central, AEP Texas North, and to be implemented in AEP-Ohio second quarter 2009)
  
- Energy Efficient Products – Targets residential customers for energy efficient products, initially CFL's, with possible expansion to other products such as appliances, HVAC, and domestic hot water heaters. Point of purchase markdown is utilized to reimburse select retailers for discounting the cost of the CFL's during limited term promotions. (To be implemented in AEP Ohio 2nd quarter 2009)

Regarding the existence of obstructions or problems that could create hesitancy to instituting additional programs in Kentucky, the Company has not yet assessed the demand and energy savings potential for these additional programs in the Company's service area. Moreover, a Commercial DSM subgroup would need to be re-established working with the existing Residential DSM Collaborative, to evaluate and approve potential new DSM programs.

The DSM Collaborative will begin the process of selecting a new commercial subgroup later this year. Upon approval of the new members, the Collaborative will assess the programs from other AEP jurisdictions for possible implementation in Kentucky Power's service territory. The Company's goal, working in conjunction with the DSM Collaborative, is to design and obtain Commission approval to implement a Commercial Audit / Incentive Program and potentially other commercial programs as deemed appropriate.

In addition, the Company is working with the DSM Collaborative to seek Commission approval to implement a new residential HVAC Tune-up Program and a residential Energy Star Appliance Program within the next six months.

WITNESS: Errol K Wagner





## Kentucky Power Company

### REQUEST

Refer to the response to Staff's Initial Data Request, Item 67, regarding the relationship of Kentucky's certificate statute and Energy Independence and Security Act ("EISA") 2007, Section 532(a)(16)(b). Describe any actions Kentucky Power believes the Commission can take that will result in the federal standard yielding to the requirement of state law.

### RESPONSE

The Commission lacks the authority under state law to "amend, alter, enlarge or limit the terms of [a] legislative enactment," *Camera Center v. Revenue Cabinet*, 34 S.W.3d 39, 41 (Ky. 2000). Such a legislative enactment would include KRS 278.020. As a result, the Commission may adopt the Section 532(a)(16)(B) of the Energy Independence and Security Act of 2007 standard only to the extent it does not conflict with KRS 278.020 (which it does as explained in the Company's response to Staff's Data Request, Item 67), or alternatively, may adopt the federal standard but only upon the condition that the federal standard yield to the requirements of state law in the case of a conflict. Instances of conflict between the federal and state standard, and thus where the federal standard would have to yield to Kentucky law, would include when making cost-effective energy efficiency a priority resource results in wasteful duplication, and where there is no need otherwise for the facility.

By way of further explanation, there is nothing in Section 532(a)(16)(B) that prevents the Commission from adopting the federal standard on the condition that the federal standard must yield in the case of a conflict with state law. First, the standard established by Section 532(a)(16)(B) of the Energy Independence and Security Act of 2007 does not purport to preempt state law. Rather, 16 U.S.C. § 2621(a) requires the Commission only to "consider each standard established by subsection (d) [which would include the standards created by Section 532(a)(16)(B)] and make a determination concerning whether or not it is appropriate to implement such standard to carry out the purposes of ... [16 U.S.C. § 2601 *et seq.*] More importantly, 16 U.S.C. § 2621(a) further provides that the Commission may reject the federal standard to the extent it conflicts with state law:

Nothing in this subsection prohibits any State regulatory authority ... from making any determination that it is not appropriate to implement any such standard, pursuant to its authority under otherwise applicable State law.

Thus, federal law permits the Commission to do that what state law requires.

**WITNESS:** Errol K Wagner



**Kentucky Power Company**

**REQUEST**

Refer to Kentucky Power's response to Staff's Initial Data Request, Item 68. Explain whether Kentucky Power believes that increased customer charges would promote energy efficiency. Include in the explanation whether Kentucky Power intends to move its customer charges toward a rate that more accurately reflects full cost-of-service in future rate proceedings.

**RESPONSE**

Kentucky Power intends to continue its efforts to move its customer charges toward full cost-of-service in future rate proceedings. To the extent that customer-related costs are collected through usage charges, customers receive a price signal that inappropriately overstates the value of energy efficiency. Increased customer charges that reflect full cost-of-service neither promote nor inhibit energy efficiency.

**WITNESS:** Errol K Wagner



## **Kentucky Power Company**

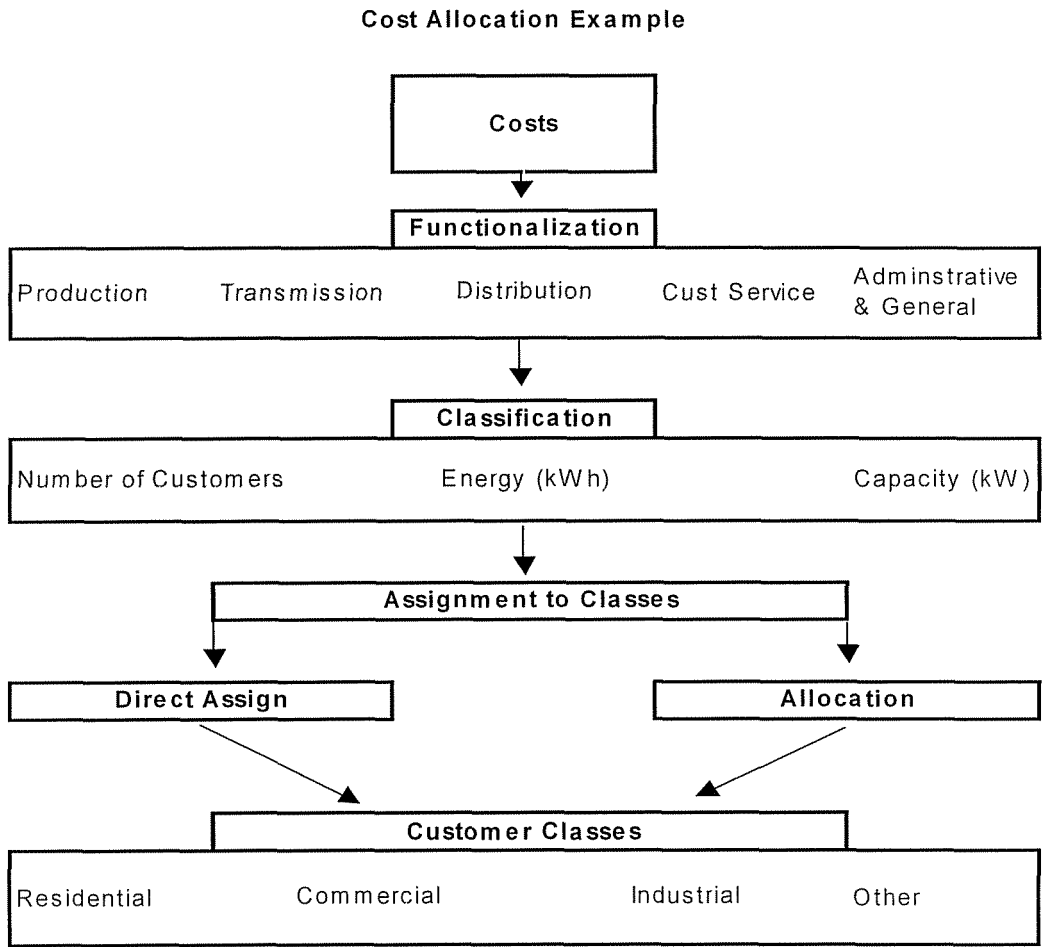
### **REQUEST**

Refer to the response to Staff's Initial Data Request, Item 71, regarding subsidies among Kentucky Power's customer classes. Describe the cost-of-service methodology used by Kentucky Power in its last rate case.

### **RESPONSE**

Kentucky Power utilized an average embedded class cost-of-service study in its most recent rate case (Case No. 2005-00341). In such studies, the Company's costs are assigned to the different customer classes in a manner that reflects the costs of providing utility service to the classes. A three-step process is followed to assign costs to the customer classes: functionalization of costs, classification of costs, and finally, allocation of costs, as shown in Figure 1 below:

Figure 1:



For a more detailed explanation, the Direct Testimony of Larry C. Foust in Case No. 2005-00341 is attached.

**WITNESS:** Errol K Wagner

**BEFORE THE  
PUBLIC SERVICE COMMISSION OF KENTUCKY**

**IN THE MATTER OF**

**GENERAL ADJUSTMENTS IN  
ELECTRIC RATES OF  
KENTUCKY POWER COMPANY**

**CASE NO. 2005-00341**

**DIRECT TESTIMONY  
OF  
LARRY C FOUST  
  
ON BEHALF OF  
KENTUCKY POWER COMPANY**

**September 26, 2005**

**DIRECT TESTIMONY OF  
LARRY C. FOUST, ON BEHALF OF  
KENTUCKY POWER COMPANY  
BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY**

**CASE NO. 2005-00341**

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**DIRECT TESTIMONY OF  
LARRY C. FOUST, ON BEHALF OF  
KENTUCKY POWER COMPANY  
BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY**

1

**Introduction**

2 Q. Please state your name, business address, and position.

3 A. My name is Larry C. Foust. My business address is 1 Riverside Plaza, Columbus,  
4 Ohio 43215. I currently hold the position of Regulatory Specialist in the  
5 Regulated Pricing and Analysis department for the American Electric Power  
6 Service Corporation (AEPSC), a subsidiary of American Electric Power  
7 Company, Inc. (AEP).

8

**Background**

9 Q. Please summarize your educational background and employment history.

10 A. I received my Bachelor of Science in Business Administration in 1977 from The  
11 Ohio State University, majoring in Accounting. I am a Certified Public  
12 Accountant (Inactive). In 1977 I began my career as a Budget Analyst in the  
13 Generation Department of the Columbus and Southern Ohio Electric Company.  
14 In 1979 I became an Accountant in the Special Studies section of the Accounting  
15 Department. After the Columbus and Southern Ohio Electric Company was  
16 acquired by AEP, I transferred to AEPSC in 1982 as a Rate Case Coordinator. In  
17 1999 I became part of AEPSC's Customer Choice Implementation organization.  
18 In 2001 I became an Issues Manager in the Energy Delivery organization and in  
19 2004 I accepted my current position.

20 Q. What are your principal areas of responsibility as a Regulatory Specialist in the  
21 Regulated Pricing and Analysis Department?

1 A. My responsibilities are to perform pricing and costing services for rate cases,  
2 regulatory filings and rulemakings, as well as provide pricing and costing services  
3 to Kentucky Power Company (KPCo) and other AEP electric utility operating  
4 companies in the areas of regulatory analysis, cost of service studies and rate  
5 design. I also assist KPCo and other AEP electric utility operating companies in  
6 the preparation of filings before this and other commissions under whose  
7 jurisdiction these companies provide electric service.

8 Q. For whom are you testifying in this proceeding?

9 A. I am testifying on behalf of Kentucky Power Company, which I will refer to  
10 throughout my testimony either as KPCo, or as “the Company”.

11 Q. What is the purpose of your testimony?

12 A. The purpose of my testimony is to support the Company’s class cost of service  
13 study. A class cost of service study is an analysis of all of the Company’s costs at  
14 a very detailed level for purposes of assigning these costs to the various customer  
15 classes. The class cost of service study is attached to my testimony as Exhibit  
16 LCF-1.

17 **Class Cost of Service Study**

18 Q. Briefly describe the nature and purpose of a cost of service study.

19 A. Cost studies are utilized to determine the revenue requirement for the services  
20 offered by the utility, and to determine the costs that different classes of  
21 customers impose on the utility system. A cost of service study is a basic  
22 analytical tool used in traditional utility rate design. When the process of  
23 preparing a cost of service study is completed and all of the costs are allocated to

1 the various jurisdictions and customer classes, the result is a fully allocated cost  
2 study that establishes cost responsibility and makes it possible to determine rates  
3 based on costs that are just and reasonable.

4 Q. What is the source of the data to be used in a cost of service study?

5 A. Cost of service studies rely on historic or projected accounting records of the  
6 utility company. The Company follows the Uniform System of Accounts  
7 (USOA) as prescribed by FERC and adopted by this Commission. The USOA  
8 sets the guidelines for recording assets, liabilities, income and expenses into  
9 various accounts. The costs recorded in each FERC account are examined to  
10 verify compliance with these guidelines and are typically adjusted to reflect the  
11 applicable regulatory commission's policies and for known and measurable  
12 changes to the test year level of expenditures.

13 Q. After the costs recorded in FERC accounts are examined and adjusted where  
14 appropriate, how is this information used?

15 A. This accounting cost information is assigned to the different customer classes in a  
16 way that reflects the costs of providing utility service to the classes. A three-step  
17 process is followed to assign costs to the customer classes: functionalization of  
18 costs, classification of costs, and finally, allocation of costs.

19 Q. Please describe the functionalization process.

20 A. Once the relevant data is gathered, the costs are then separated by function.

21 Typically, functions in an electric utility are:

- 22 1) Production and Purchased Power costs,  
23 2) Transmission costs,

- 1           3)     Distribution costs,  
 2           4)     Customer Service costs, and  
 3           5)     Administrative and General (A&G) costs.

4           The production function includes the costs associated with power  
 5           generation and power purchases and their delivery to the bulk transmission  
 6           system. The transmission function consists of costs associated with the high  
 7           voltage system utilized for the bulk transmission of power to and from  
 8           interconnected utilities to the load centers of the utility's system. The distribution  
 9           function includes the radial distribution system that connects the transmission  
 10          system and the ultimate customer. The customer service function encompasses  
 11          the costs associated with providing meter reading, billing and collection, and  
 12          customer information and services. The A&G function is comprised of costs that  
 13          may not be directly assignable to other cost functions. These costs include such  
 14          items as management costs and administrative buildings. A&G costs are  
 15          generally allocated to the remaining functions based on labor.

16    Q.    Please describe the classification process.

17    A.    The second step is to separate the functionalized costs into these classifications: 1)  
 18          demand costs (costs associated with the kW demand imposed by the customer), 2)  
 19          energy costs (costs that vary with the number of kilowatt hours used by the  
 20          customer), and 3) customer costs (costs that are directly related to the number of  
 21          customers served). Typical cost classifications used in cost studies are:

	<u>Function</u>	<u>Classification</u>
23	Production	Demand, Energy

1	Transmission	Demand
2	Distribution	Demand, Customer
3	Customer Service	Customer

4           Production plant costs, such as depreciation and return on investment, are  
5 considered to be demand-related costs because costs of this nature are incurred  
6 regardless of the amount of energy consumed or the number of customers. Some  
7 production costs such as fuel costs and certain production operation and  
8 maintenance (O&M) expenses are energy-related because they vary with the  
9 quantity of electricity produced. Transmission costs are classified as demand-  
10 related costs because they are fixed costs and do not vary with energy usage and  
11 do not directly change with the number of customers utilizing the transmission  
12 system. Generally, the distribution system costs are affected by either the  
13 instantaneous peak demand imposed on the distribution facilities or by the  
14 number of customers served. Demand related distribution costs typically vary  
15 with the size of the electrical load served, while customer related distribution  
16 costs vary based on the number of customers receiving the service. Customer  
17 service costs are primarily related to the number of customers. The classification  
18 process provides a basis on which to allocate different categories of costs  
19 (demand, energy or customer) to the Company's classes.

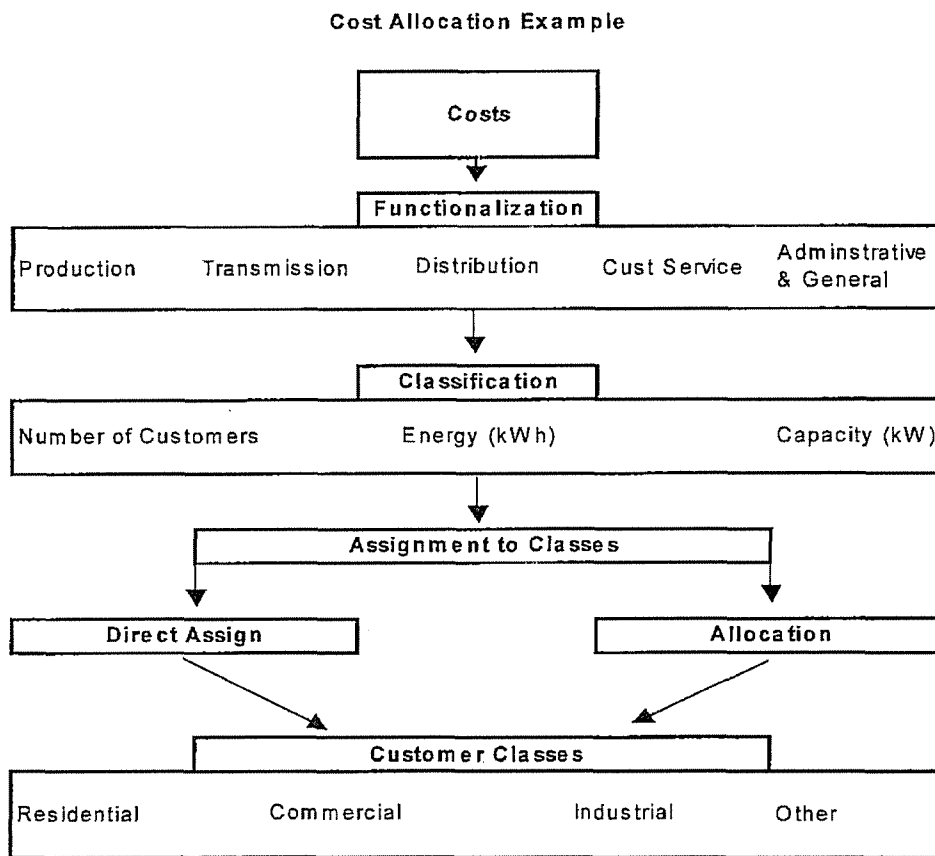
20 Q. Please describe the allocation process.

21 A. The third and final step is to allocate these costs among the classes of customers  
22 based on how the costs are incurred for each class. Customer classes are  
23 determined and grouped according to the nature of service provided, voltage level

1 and the load usage characteristics. The three principal customer classes are  
2 residential, commercial, and industrial. The need to subdivide these classes  
3 depends on the individual customer base.

4 The allocation process involves dividing the functionalized and classified  
5 costs among the customer classes. The objective in this process is to determine a  
6 reasonable, appropriate, and understandable method to assign the costs. Some  
7 costs are directly assignable to a single class, or even a single customer. For  
8 instance, the costs associated with the poles and luminaries used for street lighting  
9 are directly assigned to the street lighting class. Most costs, however, are  
10 attributable to more than one type of customer. These are joint costs and must be  
11 allocated to customers by an allocation methodology that is based on the manner  
12 in which the costs are caused by the different customers. The following flowchart  
13 provides an overview of how the allocation of costs to customer classes is  
14 determined.

Figure 1:



1  
 2 In the example, costs are functionalized into production, transmission,  
 3 distribution, etc. Some of these costs can be directly assigned to a customer class  
 4 as mentioned previously. The remaining joint costs are incurred based on the  
 5 number of customers, the energy used, or by the capacity demanded. In many  
 6 instances, the classification process will lead to an allocation methodology. For  
 7 example, the cost of billing customers varies with the number of customers as  
 8 well as the complexity of preparing the customer's bill, so those costs associated  
 9 with billing are allocated to the jurisdictions based on a weighted number of  
 10 customers. A weighted number of customers allocation factor is developed by

1 multiplying the number of customers in each class or jurisdiction by a factor  
2 representing the difference in cost associated with providing that service to  
3 different types of customers. Similarly, the cost of fuel varies by the number of  
4 kilowatt hours consumed and therefore is allocated based on the proportion of  
5 total energy used by a customer class.

6 When this process is completed and all of the costs are allocated to the  
7 jurisdictions and customer classes, the result is a fully allocated cost study that  
8 establishes cost responsibility and makes it possible to determine rates based on  
9 costs that are just and reasonable.

10 Q. What criteria must be established to ensure that the allocation of costs to the  
11 customers is appropriate?

12 A. Generally, the following criteria should be used to determine the appropriateness  
13 of an allocation methodology:

- 14 1) The method should reflect the planning and operating  
15 characteristics of the utility's system.
- 16 2) The method should recognize customer class characteristics such  
17 as energy usage, peak demand on the system, diversity  
18 characteristics, number of customers, etc.
- 19 3) The method should produce stable results on a year-to-year basis.
- 20 4) Customers who benefit from the use of the system should also bear  
21 appropriate cost responsibility for the system.

22 Q. Does the allocation method employed by the Company meet these objectives?



1 A. Yes, it does. The allocation methodology utilized in the Company's cost of  
2 service study was chosen while considering each of the criteria listed above. The  
3 results of the cost of service study can be relied upon to determine the appropriate  
4 revenue requirement for the KPCo customer classes.

5 Q. How does this cost of service study compare to the cost of service study filed by  
6 the Company in its previous rate case?

7 A. This cost of service study is substantially the same as the Company's cost of  
8 service study filed in the previous rate case. The functionalization and  
9 classification of costs are the same but a few small accounts were allocated on a  
10 slightly different basis using more current information.

11 **Allocation Basis**

12 Q. Please describe the allocation of Electric Plant in Service.

13 A. Electric Plant in Service is identified and functionalized into production,  
14 transmission, distribution and general plant. Production plant is classified as  
15 demand related and is allocated using the production demand allocation factor.  
16 The production demand allocation factor assigns costs based on the class  
17 contribution to the average of KPCo's 12 monthly peaks on the production  
18 facilities. Generator step-up transformers are included in transmission plant, but I  
19 have separately identified them and allocated them using the production demand  
20 allocation factor since they are more related to the production function. The  
21 remaining transmission plant is classified as demand related and is allocated using  
22 the transmission demand allocation factor. The transmission demand allocation  
23 factor assigns costs based on the class contribution to the average of KPCo's 12

1 monthly peaks on the transmission facilities. Distribution plant is classified as  
2 demand/customer related and allocated to the customer classes using factors based  
3 on demand levels or number of customers. Distribution plant accounts 360  
4 through 368, as shown on Exhibit LCF-1, were classified solely as demand-  
5 related for class allocation purposes. Accounts 360, 361 and 362 were allocated  
6 to the distribution customer classes based on their contributions to the average of  
7 KPCo's 12 monthly peak demands on the primary distribution system.

8 Accounts 364 through 367 were split into primary and secondary voltage  
9 functions based upon information contained in the Company's records and the  
10 expertise of the Company's distribution engineers. The primary portions of  
11 accounts 364 through 367 were allocated using the average of 12 monthly peak  
12 demands on the distribution system. The secondary component of accounts 364  
13 through 367 were allocated based on a combination of each class's 12-month  
14 maximum demand and the summation of individual customers' annual maximum  
15 demands in each class served from those facilities. This process reflects the fact  
16 that some secondary facilities serve only one customer, while others serve two or  
17 more customers.

18 Account 368 was allocated to the customer classes served from those  
19 facilities using the appropriate secondary voltage demand allocation factors  
20 described above.

21 Services, account 369, was classified as customer-related and was  
22 allocated using the average number of secondary customers served.

1           Meter plant was allocated using the average number of customers  
2           weighted by a factor which considers the cost differential of various metering  
3           installations. Account 371 was directly assigned to the outdoor lighting class and  
4           account 373 was directly assigned to the street lighting class. Classification of  
5           distribution plant into demand and customer components is accomplished through  
6           a study of the components of distribution plant. General and intangible plant and  
7           investment reflects a composite demand, energy and customer classification.  
8           General and intangible plant investment is allocated on the basis of payroll labor.

9    Q.    Please describe the allocation of Accumulated Provision for Depreciation and  
10   Amortization.

11   A.    Accumulated Provision for Depreciation and Amortization was functionalized and  
12   classified in a fashion similar to Electric Plant in Service. Production,  
13   transmission, distribution and general and intangible related amounts were  
14   allocated based upon the allocation of the related Electric Plant in Service.

15   Q.    Please describe the allocation of other rate base components.

16   A.    Working Capital was divided into cash, material and supplies and prepayments.  
17   Cash working capital is made up of system sales revenue, split between demand  
18   and energy and O&M expense net of system sales. Demand related system sales  
19   were allocated based upon the production demand allocation factor. Energy  
20   related system sales were allocated based upon the energy allocation factor and  
21   the O&M expense net of system sales was allocated based upon the allocation of  
22   total O&M expense. The energy allocation factor allocates costs based on the  
23   class energy used during the period compared to the total energy used by all

1 classes. Materials and supplies were split between fuel stock, production and  
2 transmission and distribution. Fuel stock was allocated using the energy allocation  
3 factor. Production related material and supplies were allocated using the  
4 production demand allocation factor and the transmission and distribution related  
5 materials and supplies were allocated using the allocation of transmission and  
6 distribution electric plant in service. Prepayments were allocated using factors  
7 developed from gross plant relationships. Plant Held for Future Use is  
8 transmission related and allocated using transmission electric plant in service.  
9 Construction Work in Progress was functionalized and allocated using appropriate  
10 related factors. Customer Deposits were assigned based on an analysis of  
11 accounting records. Accumulated Deferred Federal Income Tax Credits were  
12 allocated on electric plant in service and customer advances were allocated based  
13 on the number of customers.

14 Q. How were revenues developed for each class?

15 A. Sales revenue was directly assigned to each class.

16 Forfeited discounts were directly assigned based on an analysis of  
17 accounting records. Miscellaneous service revenue was allocated on distribution  
18 electric plant in service

19 Rent from electric property and other electric revenue was functionalized  
20 and allocated to classes based on related functional allocators.

21 Q. Please describe the allocation of production operation and maintenance expense.

22 A. Production related O&M was classified as either demand or energy related. The  
23 demand component was allocated using the production demand allocation factor

1 and the energy component was allocated using the energy allocation factor.  
2 Demand-related system sales revenue was allocated based on the production demand  
3 allocation factor. Energy-related system sales revenue was allocated on the energy  
4 allocation factor.

5 Q. Please describe the allocation of transmission O&M.

6 A. Transmission related O&M was classified as demand related and allocated using  
7 the transmission demand allocation factor.

8 Q. Please describe the allocation of distribution O&M between the various customer  
9 classes.

10 A. Distribution O&M expenses were functionalized and classified according to the  
11 associated distribution plant accounts and allocated accordingly. Accounts 581,  
12 Load Dispatching and 582, Station Expenses were allocated using the distribution  
13 demand allocation factor. Account 583 Overhead Line Expense was allocated  
14 based upon the same allocation used for plant account 365 Overhead Lines.  
15 Account 584 Underground Line Expense was allocated based upon the same  
16 allocation used for plant accounts 366 Underground Conduit and 367  
17 Underground Lines. Account 585, Street Lighting Operation Expense, was  
18 classified as customer-related and directly assigned to the street lighting class.  
19 Meter Operation Expense, account 586, was classified customer-related and  
20 allocated in the same manner as meter plant. Account 587, Customer Installation  
21 Expense was classified customer-related and allocated based on primary  
22 customers.

1           Accounts 588 and 589 were allocated on total distribution plant and  
2           classified accordingly. Account 580 was classified demand- and customer-related  
3           and allocated using the allocated subtotal of accounts 581 through 589.

4           Account 591 and 592 were classified demand-related and allocated on the  
5           distribution demand allocation factor. Accounts 593, 594, and 595 were  
6           functionalized and classified according to the associated distribution plant  
7           accounts and allocated accordingly. Distribution maintenance account 596 was  
8           directly assigned to the street lighting class. Account 597 was classified  
9           customer-related and allocated in the same manner as meter plant. Account 598  
10          was classified customer-related and directly assigned to the outdoor lighting class.  
11          Account 590 was classified and allocated based on the sum of the allocated O&M  
12          expense accounts 591 through 598.

13    Q.    Can you explain how customer accounting (accounts 901-905), customer services  
14          (accounts 907-910) and sales expense (accounts 911-916) were allocated?

15    A.    Account 902, Meter Reading Expense, was allocated to those classes with meter  
16          installations based upon an average number of customers weighted to reflect  
17          differences in meter reading requirements. Customer Records Expense, account  
18          903, was divided into two categories of cost; call center and other. Call center  
19          costs were first split into residential and other based on the number of calls  
20          received and then other call center expenses were allocated based on the number  
21          of customers. The other category of expenses was allocated based on the number  
22          of customers. Account 904, Uncollectibles, was allocated based on the number of  
23          customers. Accounts 901 and 905 were allocated based on the sum of the

1 allocated accounts 902, 903 and 904. All customer accounting expenses were  
2 classified as customer-related.

3 Accounts 907 through 916 were allocated based on the number of  
4 customers.

5 Q. Please describe the allocation of administrative and general (A&G) expense.

6 A. A&G expense, excluding regulatory expense, was functionalized and classified  
7 using O&M labor expense. The functionalized/classified cost was then allocated  
8 using the appropriate functional classification allocator. A&G regulatory expense  
9 was allocated based on gross utility plant.

10 Q. Please describe the allocation of depreciation and amortization expense.

11 A. The functionalized components of depreciation and amortization expense were  
12 allocated using the corresponding plant items.

13 Q. How were taxes assigned to the retail classes?

14 A. Individual other tax items were allocated and classified using the appropriate  
15 demand or plant allocator.

16 Interest expense was allocated on rate base and individual Schedule M  
17 items were allocated using the appropriate allocators. State and current Federal  
18 income taxes were computed by class. Feedback of prior Investment Tax Credit  
19 Normalized was allocated based on gross utility plant and individual Deferred  
20 Federal Income Tax items were allocated using the appropriate allocation factors.

21 Q. Please describe the allocation of the Allowance for Funds Used During  
22 Construction (AFUDC) offset.

1 A. The functionalized components of the AFUDC offset were allocated using the  
2 corresponding plant allocator.

3 Q. What is the resulting earned rate of return for each class shown in the class cost of  
4 service study?

5 A. The resulting earned rates of return are as follows:

CLASS	ROR
Residential	-0.09 %
Small General Service	7.69 %
Medium General Service	9.86 %
Large General Service	6.26 %
Quantity Power	6.94 %
Commercial and Industrial Power - Time of Day	5.79 %
Municipal Waterworks	7.63 %
Outdoor Lighting	2.12 %
Street Lighting	9.77 %
Total KPCo Jurisdiction	3.31 %

6 Q. How are these rates of return used in this proceeding?

7 A. Witness Roush uses the earned rates of return for each class as a basis for the  
8 allocation of the revenue increase required for each class.

9 Q. Does this conclude your direct testimony?

10 A. Yes, it does.





**Kentucky Power Company**

**REQUEST**

Refer to Kentucky Power's response to Staff's Initial Data Request, Item 76. Provide a copy of one of the 37 letters sent to eligible customers concerning the experimental tariff RTP.

**RESPONSE**

Attached is a copy of a letter sent to the eligible customers concerning the experimental tariff RTP. The customer's name and address has been omitted. Upon further reviewing the information to respond to this data request, it was discovered that in fact 47 customers received a copy of the attached letter not 37 customers as originally reported.

**WITNESS:** Errol K Wagner



A unit of American Electric Power

KPSC CASE NO. 2008-00408  
STAFF 2<sup>ND</sup> SET DATA REQUESTS  
ORDER DATED APRIL 13, 2009  
ITEM NO. 29  
PAGE 2 OF 2

April 11, 2008

ACCOUNT NAME  
ADDRESS  
ADDRESS  
CITY, STATE, ZIP  
Attn: CUSTOMER CONTACT

**RE: Account Number *ELECTRIC ACCOUNT***

**Real Time Pricing Tariff  
Kentucky Power Company**

Dear CUSTOMER CONTACT,

Kentucky Power Company recently applied and received approval to offer an experimental Real Time Pricing (RTP) tariff. This rate, which is scheduled to become effective June 1, 2008, will be offered on an experimental basis over a three-year period. The tariff provides a unique opportunity for qualifying customers to designate a portion of electric load that would be billed with rates established through the PJM Interconnection, L.L.C. regional market. Your decision to participate will most likely depend on your electric load and operating characteristics as well as your ability to properly respond to the real-time energy market.

We have identified your electric account(s) utilizing the Quantity Power (QP) or Commercial Industrial Power Time of Day (CIP-TOD) tariff(s), as potentially qualifying for the RTP rate. The RTP experimental tariff is limited to a maximum of 10 Kentucky Power customers having a peak electric demand equal to or greater than 1 MW. Other requirements are listed in the Tariff RTP schedule included with this letter.

Please let me know if you have an interest in learning more about the new RTP Tariff. Depending on available meter data, I might be able to assist with a detailed rate analysis using operating information which you supply.

Annual customer participation will coincide with the PJM planning year beginning June 1<sup>st</sup> through May 31<sup>st</sup>. Yearly notification of the Company is required by May 15<sup>th</sup> to request participation with this new tariff rate.

Please contact me at (xxx) xxx-xxxx) or at e-mail xxxxxxxx, should you have any questions or comments.

Sincerely

E. J. Clayton  
Customer Service Engineer

Enclosures: RTP Tariff Sheets (30-1 through 30-4)



## **Kentucky Power Company**

### **REQUEST**

Refer to Kentucky Power's response to Staff's Initial Data Request, Item 77. Kentucky Power states that it has not performed any formal in-depth studies to quantify the feasibility of its COGEN/SPP I and COGEN/SPP II tariffs. Explain whether Kentucky Power has contacted potential participants concerning the tariffs. If Kentucky Power has not contacted potential participants, explain why it has not.

### **RESPONSE**

KPCo's COGEN/SPP I and COGEN/SPP II Tariffs have been in effect since the Commission's June 28, 1984 Order in Case No. 8566. The Company has had contact and/or discussions with customers about taking service under these two tariffs. As of April 24, 2009, no customer has elected to take service under these tariffs.

**WITNESS:** Errol K Wagner



## **Kentucky Power Company**

### **REQUEST**

Refer to Kentucky Power's response to Staff's Initial Data Request, Item 79. Explain whether any AEP DSM programs incorporate smart grid technology or gridSMART. If other AEP subsidiary companies incorporate these technologies, identify the companies and explain the technologies employed. Include in the explanation the conditions existing in Kentucky that discourage employing such technologies.

### **RESPONSE**

AEP's Indiana Michigan Power subsidiary recently deployed a 10,000 meter gridSMART pilot in South Bend, Indiana, and will use the deployment as the foundation for demand response programs with consumers. Using RF meshing technologies and smart meters that can communicate with in-home devices, Indiana Michigan Power intends to deploy demand response through programmable communicating thermostats in June 2009. This is the first deployment of smart meters within AEP. The AEP Ohio subsidiary recently received regulatory approval for the first phase of a statewide gridSMART deployment that is scheduled to begin late 2009.

These deployments will provide experiences that can be shared with all of the AEP operating companies including Kentucky Power. There are no conditions existing in Kentucky that discourage the deployment of such technologies. Kentucky Power expects to begin converting its existing automated metering reading (AMR) technology (installed in 2006) to advanced metering infrastructure ("AMI") technology in 2012 or later to enable ratepayers to continue to reap the benefits, improved meter read attainment, accuracy and cost and safety reductions that are being provided by the existing AMR technology. In addition, industry projections predict that the cost of AMI technology will decline from current prices as more utilities adopt the technology, thereby further benefiting Kentucky Power customers.

**WITNESS:** Errol K Wagner





## **Kentucky Power Company**

### **REQUEST**

Refer to the response to Staff's Initial Data Request, Item 82, concerning the financial components of the EISA 2007 smart grid standard. Provide a general description of (1) how Kentucky Power sees the Commission's oversight role regarding a utility's smart grid investments under the scenario discussed in the response and (2) the manner in which Kentucky Power envisions "timely cost recovery" being provided.

### **RESPONSE**

To the extent the EISA 2007 smart grid standards and the associated smart grid investments seek to modify or influence customers' consumption patterns, KPCo believes the associated costs of these smart grid programs would flow through the Demand Side Management (DSM) surcharge in accordance with KRS 278.285. The Commission approves these programs and the associated rates before the implementation. In addition, the effects of the smart grid Energy Efficiency (EE) and DSM programs will be (and in the case of existing DSM programs are) reflected in the Company's Integrated Resource Plan (IRP) which is also reviewed by the Commission. To the extent any costs associated with smart grid investment are not designed to modify or influence customer's consumption patterns, those costs would follow the normal course of business and be recovered through the Company's base rate cases.

**WITNESS:** Errol K Wagner



## **Kentucky Power Company**

### **REQUEST**

Refer to the response of Duke Kentucky to Staff's Initial Data Request, item 36, Attachment (a), pages 17-18. Describe the extent to which your plans for smart grid reflect the addition of infrastructure and new technology that will enhance the integration of demand response and energy efficiency into your system.

### **RESPONSE**

Duke Kentucky's response is a summary of their participation in EPRI's Intelligrid Program 161D – Infrastructure and Technology for Integrating Demand Response and Energy Efficiency, and specifically subprograms P161.007, P161.008, and P161.009. AEP has funded this program and is the utility chair for the program's utility advisors group for 2009. Several other programs within EPRI's P161 Intelligrid research areas are also being funded by AEP.

AEP fully supports the ongoing research into the extensions of Common Information Model (CIM) as a foundation for the integration of demand response and energy efficiency into its gridSMART<sup>SM</sup> initiative. Over a decade ago, AEP was a key contributor to the creation of IEC 61850, the common information model for substation communications in use today. AEP's Dolan Technology Center, in Groveport, Ohio, is one of only a few IEC61850 certification laboratories in the United States.

Within Indiana Michigan Power's South Bend pilot, AMI/smart meter technology will be used to demonstrate enhanced integration of demand response and energy efficiency into the overall utility system.

**WITNESS:** Errol K Wagner



## **Kentucky Power Company**

### **REQUEST**

Refer to the response of Duke Kentucky to Staff's Initial Data Request, Item 36, Attachment (c), pages 49-50. Describe the extent to which your plans for smart grid incorporate the addition of communication infrastructure that will enhance the use of distributed resources on your system.

### **RESPONSE**

Duke's response includes the description of another EPRI program, P161.007 Common Information Model and Information Integration for Meter Data Management, Demand Response, and Distributed Resource Integration.

AEP is also funding this research program, and expects future deployments of distributed resources to be fully integrated with related gridSMART<sup>SM</sup> technologies, leveraging communications system investments where possible. The specific EPRI research program referred to in this section acknowledges that standards being developed in a variety of forums within the industry, and AEP personnel have been actively involved in these developments. Key activities are occurring within the UCA International User's Group, National Institute of Standards and Technology (NIST), IEEE and the ZigBee-Homeplug Alliance.

AEP has deployed a variety of distributed resources on its system, including large scale 1MW to 2MW Sodium Sulfide (NaS) battery energy storage systems and rooftop flat panel photovoltaic systems. AEP was recently selected to host one of EPRI's smart grid demonstration projects which will demonstrate how the integration of AMI/smart meter deployments, large scale batteries, distributed generation, and plug-in hybrid electric vehicles (PHEVs) can be modeled.

**WITNESS:** Errol K Wagner



## **Kentucky Power Company**

### **REQUEST**

It does not appear from the testimony and data responses that any of the electric utilities are considering networking options for smart grid, such as partnering with broadband and mobile wireless providers to provide network connections, as opposed to investing in the construction of their own networks. Explain whether such partnering is being explored on either a utility-specific or industry-wide level.

### **RESPONSE**

For each communication requirement, AEP performs cost analyses to determine the most cost-effective option for its AMI/smart meter or distribution system management applications. To date, cost to use commercial broadband or mobile wireless networks has not compared favorably to the cost of utility-owned communications networks for AMI/smart meter systems in AEP's service territory.

However, AEP has leveraged both wired broadband and mobile wireless services for specific communications requirements where these options have been determined to be a more cost effective option. Two such examples are AEP's use of cellular networks as a back haul option for AMI data collectors and the use of leased frame relay circuits for SCADA links to substations.

**WITNESS:** Errol K Wagner





Kentucky Power Company

**REQUEST**

It does not appear from the testimony and data responses that any of the electric utilities have indicated to what extent they have prioritized the smart grid elements they plan to pursue. Provide a list showing how you have prioritized the items in your smart grid plan along with an explanation thereof.

**RESPONSE**

Please see Mr. Wagner's testimony at Page 29, lines 3 through 25. Since Kentucky Power has fully deployed an AMR system, it does not plan to deploy AMI/smart meter systems until 2012 or later.

Priority has been placed on the initial deployments of distribution grid management options. Several distribution automation projects were described in detail within Mr. Wagner's testimony, at Page 30, line 1 through Page 32, line 25.

Kentucky Power expects AMI and HAN capabilities to be closely linked, and deployed using a common communications system. Demand response programs leveraging the AMI/smart meter systems would follow HAN deployments, and this sequencing appears consistent with progress being made in the vendor communities with respect to meeting these business requirements. The large-scale integration of distributed resources, including PHEVs, would likely follow from broad adoption by consumers.

The execution pace of Kentucky Power's gridSMART<sup>SM</sup> deployment plan will be directly linked to available capital and its ability to recover the cost, net of operational benefits, from these proposed investments.

**WITNESS:** Errol K Wagner