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MAR 30 2009

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COMMISSION

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March 30, 2009

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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 ten copies of Kentucky Power Company's responses to the Staff's March 16, 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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MAR 30 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**

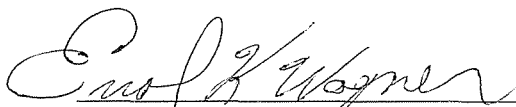
KENTUCKY POWER COMPANY
RESPONSES TO COMMISSION STAFF'S INITIAL DATA REQUESTS

March 30, 2009

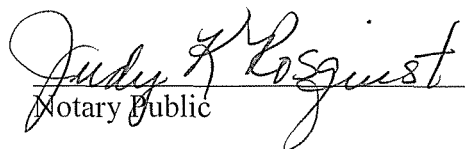
VERIFICATION

COMMONWEALTH OF KENTUCKY)
) CASE NO. 2008-00408
COUNTY OF FRANKLIN)

The undersigned, **Errol Wagner**, being duly sworn, deposes and says he is the Director of Regulatory Services for Kentucky Power Company, that he has personal knowledge of the matters set forth in the foregoing testimony, and the answers contained therein are true and correct to the best of his information, knowledge and belief.


ERROL K. WAGNER

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 30th day of March 2009.


Notary Public (SEAL)

My Commission Expires:

January 23, 2013

Kentucky Power Company

REQUEST

State whether Kentucky Power believes that EISA 2007, Section 532(a)(16)(B), under which electric utilities shall adopt policies establishing cost-effective energy efficiency as a priority resource, is consistent with Kentucky's IRP regulation, 807 KAR 5:058. Explain why or why not.

RESPONSE

The IRP regulation is consistent with Section 532 (a) (16) (B) of the EISA 2007. The current rules provide for and require the consideration of demand side resources. The rules further require that the planned resources adequately and reliably meet the forecasted peak and energy demands "at the lowest possible cost". The rules are not explicit that cost-effective demand side resources be given priority status, however, the requirement to produce a (reliable and adequate) plan that has the lowest possible cost would necessarily imply that energy efficiency measures, to the extent that they are cost effective, are given "priority".

WITNESS: Errol K Wagner

Kentucky Power Company

REQUEST

With reference to the discussion in the Direct Testimony of Errol K. Wagner ("Wagner Direct"), pages 6 through 10, of the manner in which energy efficiency is incorporated into Kentucky Power's planning, address the following:

- a. Absent the programs described on pages 9 and 10, explain in detail how Kentucky Power treats energy efficiency as a priority resource.
- b. Identify and describe any goals Kentucky Power has developed for energy efficiency programs in terms of kWh (or KW or MW if more appropriate) displaced or saved.

RESPONSE

- a. Energy efficiency and demand response resources are modeled for planning purposes within the larger AEP-East operating area. "Blocks" of energy efficiency and demand response options are available, along side with supply options, within the optimization software. The blocks are given the characteristics of energy efficiency/demand response (EE/DR) programs identified in one or more market potential studies (recently) performed for AEP-East affiliates. These characteristics include annual kWh impacts, kW impacts, (full)costs, and load shapes. The optimization software, which uses total cost as it's optimization criterion, will pick EE/DR blocks where it is economical to do so. There are limitations placed on how many blocks can be selected in a single year and how many blocks of a given set of characteristics (commercial lighting, e.g) to model the practical considerations of rolling out programs and (eventually) achieving saturation. In this regard, EE/DR resources are treated on an equal basis with supply resources.
- b. AEP has publicized a goal of having 1,000 MW of demand reduction resources in place by year-end 2012 and an energy reduction goal of 2,250 GWh annually in the same period. Kentucky Power's contribution to this goal is 37 MWs of demand reduction and 84 GWhs of annual energy reduction. Achievement of these goals are contingent upon appropriate cost recovery and customer acceptance of the energy EE/DR programs.

WITNESS: Errol K Wagner

Kentucky Power Company

REQUEST

Provide an estimate of the annual kWh (or KW or MW if more appropriate) displaced or saved by each DSM program listed on Exhibit EKW-2.

RESPONSE

Please see Page 2 of the response.

WITNESS: Errol K Wagner

Kentucky Power Company
 Annual KWH Saved by each DSM Program
 From Year 1996 to 2008

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Residential Programs													
Energy Fitness	437,932	561,561	879,879	453,320	0	0	0	0	0	0	0	0	0
Targeted Energy Efficiency	645,007	792,718	940,759	131,051	534,703	118,945	186,219	144,144	410,025	204,951	186,102	256,794	293,256
Compact Fluorescent Bulb	4,979	0	0	0	0	0	0	0	0	0	0	0	0
High Efficiency Heat Pump	724,766	530,279	183,284	339,815	111,666	69,417	9,131	0	0	0	0	0	0
High Efficiency Heat Pump - Mobile Home	375,408	327,610	272,568	383,455	148,985	166,096	114,331	86,535	271,142	93,772	124,085	125,554	124,011
Mobile Home New Construction	n/a	n/a	26,328	413,288	526,756	356,338	252,715	214,576	723,117	303,457	396,650	415,057	188,758
Modified Energy Fitness								412,801	918,934	552,700	652,976	725,404	530,736
Total Residential Programs	2,188,092	2,212,168	2,302,818	1,720,929	1,322,110	710,796	562,396	858,056	2,323,218	1,154,880	1,359,813	1,522,809	1,136,761
Commercial Programs													
Smart Audit	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Smart Incentive	0	196,078	1,439,191	1,028,456	997,693	1,451,954	988,098	0	0	0	0	0	0
Total Commercial Programs	0	196,078	1,439,191	1,028,456	997,693	1,451,954	988,098	0	0	0	0	0	0
Industrial Programs													
Smart Audit	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Smart Incentive	0	0	1,574	0	0	0	0	0	0	0	0	0	0
Total Industrial Programs	0	0	1,574	0	0	0	0	0	0	0	0	0	0
Total kWh Reduction	2,188,092	2,408,246	3,743,583	2,749,385	2,319,803	2,162,750	1,550,494	858,056	2,323,218	1,154,880	1,359,813	1,522,809	1,136,761

Kentucky Power Company

REQUEST

State whether Kentucky Power believes that EISA 2007, Section 532(a)(16)(B), under which electric utilities shall adopt policies establishing cost-effective energy efficiency as a priority resource, is consistent with Kentucky's certificate statute, KRS 278.020. Explain why or why not.

RESPONSE

KRS 278.020(1) requires utilities, such as Kentucky Power Company, to obtain a certificate of public convenience and necessity from the Public Service Commission prior to commencing construction of "any plant, equipment, property, or facility" for furnishing electrical service to the public. KRS 278.020(1). Ordinary extensions in the usual course of business of existing systems, as well as service connections made by Kentucky Power, are exempted from the requirement. *Id.* A proposed plant or facility is in the public convenience and necessity if there is both a need for the plant or facility, and if the plant or facility will not result in wasteful duplication. *Kentucky Utilities Co. v. Public Service Comm.*, 252 S.W.2d 885, 890 (Ky. 1952). Wasteful duplication, in turn, has been defined by Kentucky's highest Court to include both unnecessary multiplicity of physical facilities and plant, and "excessive investment in relation to productivity or efficiency...." *Id.* Thus, a cost-effective energy efficient facility may nonetheless result in unnecessary duplication if it also produces an unnecessary duplication of physical facilities.

Notwithstanding this, and perhaps other, potential conflicts between any requirement for cost-effective energy efficiency and KRS 278.020(1), the federal standard will not conflict with the state statute if the requirement under Section 532(a)(16)(B) that cost-effective energy efficiency be "a priority resource," a term yet to be defined, is understood to mean that where the policy to be established pursuant to Section 532(a)(16)(B) conflicts with other priorities, including KRS 278.020(1), the federal standard must yield to the requirement of state law. The identification of such conflicts will have to be made on a case-by-case basis based upon the characteristics and economics of any proposed facility or plant.

WITNESS: Errol K Wagner

Kentucky Power Company

REQUEST

State whether Kentucky Power believes that its rate RS for residential service, which contains a customer charge and flat energy charge, supports energy efficiency. Explain why or why not.

RESPONSE

Kentucky Power's RS rate for residential service encourages energy efficiency by charging the same price for all kWh, causing the total bill to increase proportionately with usage. This is particularly true when contrasted with rates that decline as the kWh consumed increases, which Kentucky Power had prior to Case No. 2005-00341. However, to the extent that the energy charge includes residual customer-related costs not recovered in the service charge, or the rate does not reflect full cost-of-service, the efficiency price signal may be intensified or diluted, respectively.

WITNESS: Errol K Wagner

Kentucky Power Company

REQUEST

State whether Kentucky Power believes that its rate SGS for small general service with a service charge and a declining block energy charge supports energy efficiency. Explain why or why not.

RESPONSE

Kentucky Power's SGS tariff does not support energy efficiency by providing the proper price signal to customers concerning the cost of each kWh consumed. However, the elimination of declining block energy rates in the SGS tariff must be tempered by recognition of the potential adverse impacts on individual customer bills. Further, to the extent that the rate does not reflect full cost-of-service or that customer-related costs are collected in the energy charge, the price signal is distorted.

WITNESS: Errol K Wagner

Kentucky Power Company

REQUEST

State whether Kentucky Power supports inclining block rates for either residential service or small general service. Explain your answer in detail.

RESPONSE

Kentucky Power supports cost-based rate making, and thus would support inclining block rates for residential and/or small general service if such rates were justified based upon cost-of-service and cost-causation principles.

WITNESS: Errol K Wagner

Kentucky Power Company

REQUEST

With reference to the discussion in Wagner Direct, page 17, lines 5 through 12, about the movement toward full-cost-based rates address the following:

- a. When did Kentucky Power perform its most recent cost of service study?
- b. Describe the relationship of Kentucky Power's current rates charges to the level of rates and charges indicated by the results of Kentucky Power's most recent cost of service study.

RESPONSE

Kentucky Power's most recent class cost-of-service study was prepared for Case No. 2005-00341. Based upon that study, Kentucky Power's residential and outdoor lighting rates were set at levels that were then below cost-of-service, while other Kentucky Power rates were set at levels that were then above the cost-of-service. The level of subsidy that each customer class was paying/(receiving) based on the costs reflected in that case are shown in the following table:

Customer Class	Subsidy \$
RS	(25,302,761)
SGS	1,315,115
MGS	10,526,100
LGS	6,793,981
QP	3,233,615
CIP-TOD	3,711,081
MW	75,038
OL	(598,138)
SL	245,969
Total	0

WITNESS: Errol K Wagner

Kentucky Power Company

REQUEST

With reference to EISA 2007, Section 532(a)(17)(B)(i), under which the Commission shall consider removing the throughput incentive, address the following:

- a. State whether or not Kentucky Power supports decoupling. Explain your answer in detail.
- b. Current literature describes a myriad of decoupling mechanisms. If applicable, describe specifically the form of decoupling that Kentucky Power supports.

RESPONSE

a. No single model works for every utility or every scenario: one size does not fit all. Thus, KPCo submits that moderate forms of decoupling can and should be entertained, provided that the Commission is enabled with the flexibility to utilize a case-by-case approach to develop an appropriate form of decoupling for a particular utility. KPCo envisions a flexible approach where the Commission and the affected utility and the other stakeholders work together to develop a form of decoupling that is appropriate for the individual utility and serves the public interest.

b. Limited decoupling straddles the fence between traditional ratemaking and full decoupling. This approach decouples the recovery of specific costs from volumetric recovery mechanisms. It is more flexible and encourages a healthy business environment for electric utilities, while also providing appropriate price signals to customers. In KPCo's opinion, this is the most acceptable of decoupling options. It provides adaptability for changing economic environments and consumption patterns and requirements without locking in an entirely new regulatory paradigm that affects, perhaps unintentionally or inadvertently, many aspects of regulation unrelated to those changes. It also provides clear and appropriate price signals to consumers. Variations of limited decoupling include:

Net Lost margin recovery rider mechanism: compensating the utility for the sales margin lost (i.e., the fixed component of revenues lost) when consumers take advantage of opportunities such as utility energy conservation programs. These only compensate for the margin lost as a result of utility energy efficiency programs, and consumer advocates sometimes favor this limited cost recovery. KPCo and the other AEP System companies have a long history of supporting contemporaneous recovery of net lost revenues.

Away from the full decoupling end of the spectrum are alternative ratemaking models more in line with traditional ratemaking – volumetric-based models that offer more contemporaneous cost recovery and flexibility to adapt to changing load conditions without removing the price signal that stems from revenues directly tied to consumption. These are the models that KPCo finds more amenable to both consumer and utility, offering greater adaptability to changing externalities while retaining volumetric sensitivities. Among them are:

Formula rates: Similar to traditional regulation, but with an allowable “band” of rates of return and an annual true-up of that return. This is a much more flexible practice than full decoupling, but allows for consumption variations in a similar manner to traditional ratemaking. Although considered a form of “decoupling light,” formula rates are probably closest on the continuum to traditional ratemaking.

KPCo and the other AEP System companies have a history of formula based rates.

Real-time pricing: an effective way to promote energy efficiency because of accurate price signals.

Riders and adjustment mechanisms: riders, also known as trackers, are adjustments to a utility’s base rate, in which commission-approved prudent costs for a specific project or circumstance (such as storm recovery, environmental retrofits to generation plants, fuel costs, energy efficiency program costs etc.) are recovered contemporaneously from customers as costs are incurred. KPCo and the other AEP System companies have a long history of supporting contemporaneous recovery via riders. The Commission’s authority to impose such rates without authorization is now before the Courts.

Rate of return incentives: a bonus to the allowed rate of return for energy efficiency programs, tied to the level of energy efficiency investment or utility’s performance level.

WITNESS: Errol K Wagner

Kentucky Power Company

REQUEST

Explain whether or not Kentucky Power believes the Commission should implement decoupling to support energy efficiency.

RESPONSE

Please see the the Company's response to Item No. 72.

In addition, the Legislature and the Commission have already implemented a form of decoupling to support energy efficiency when KRS278.285 (3) was passed and implemented regarding a utility's DSM surcharge.

WITNESS: Errol K. Wagner

Kentucky Power Company

REQUEST

Refer to pages 18 and 19 of Wagner Direct.

- a. Why does Kentucky Power believe so few customers are participating in its energy efficiency and load management programs?
- b. Identify what steps Kentucky Power believes it could take to increase participation in its energy efficiency and load management programs.
- c. What steps does Kentucky Power believe the Commission could take to encourage participation in these types of programs?

RESPONSE

- a. There are many potential reasons why customer participation in energy efficiency and load management programs may not achieve higher participation levels. The Company believes the primary reason is the historical low cost of electricity in the Commonwealth along with the customer's perceived inconvenience of participating in these programs. Some additional reasons to be considered are the longer payback periods for any additional customer investments which was the result of the historical low cost of electricity in the Commonwealth, and customer economic constraints that cause them to avoid near-term expenditures regardless of benefits derived over time. While there may be potential actions that could be taken to address these causes, each comes at a cost. These additional costs would need to be considered relative to their value in possibly incrementally increasing participation levels.
- b. Kentucky Power could increase marketing and customer education efforts and/or increase incentive amounts, although this does not guarantee increased participation. However the related increases in costs to do so would increase all customer rates in the short term in order to achieve potential long-term benefits, which may or may not be cost effective. In addition, such cost increases could make existing programs no longer cost effective.
- c. The Commission could help raise customer awareness through customer education. Again, this also comes at an additional cost to the ratepayers.

WITNESS: Errol K Wagner

Kentucky Power Company

REQUEST

Refer to page 29 of Wagner Direct.

- a. Explain whether any components of the AMR hardware installed in 2006 can be utilized when Kentucky Power deploys AMI.
- b. Compare the estimated costs of current technology AMR and AMI metering equipment.

RESPONSE

- a. None of the AMR hardware installed in 2006 would be utilized when Kentucky Power deploys AMI.
- b. An AMR – AMI comparison is not a true comparison because of the functional differences in the AMI system. There are additional features on AMI meters that provide added capabilities, such as an internal connect/disconnect switch or radio home area network (HAN) chip to communicate to ‘in home’ devices.

Based on the assumption that all AMI meters will be equipped with an internal connect/disconnect switch and are HAN enabled, the estimated costs would be as follows for residential meters:

- Installed Drive-by AMR is approximately \$70- \$85/meter
- Installed Power Line Carrier (PLC) AMR is approximately \$110-140/ meter
- Installed AMI Meter: \$ 250 - \$300/meter (includes IT integration costs)

WITNESS: Errol K. Wagner

Kentucky Power Company

REQUEST

Refer to page 36 of Wagner Direct. No customers currently take service under the new RTP tariff.

- a. Describe the new tariff and provide Kentucky Power's expectations for customer participation in the tariff.
- b. Describe the marketing effort undertaken or planned for the RTP tariff. Provide any marketing or customer-information material that has been developed to inform customers of the new tariff.

RESPONSE

- a. Kentucky Power's experimental tariff RTP allows customers to designate a portion of their usage above a customer established baseline to be billed on market-based prices. The customer receives hourly energy price information, and based upon that information can make informed decisions concerning energy usage. The intent of the tariff was to offer customers the opportunity to manage their electric costs by shifting usage from higher cost to lower cost hours or to increase usage during low cost hours. Kentucky Power's experimental tariff RTP was available for up to 10 customers. Kentucky Power's expectation was that there would be a small number of Kentucky Power customers with sufficient energy management expertise and flexibility in usage to take advantage of the opportunities provided by the experimental RTP tariff.
- b. Kentucky Power sent a letter to 37 eligible customers providing them with information concerning this new tariff option which was available to them. The Company's customer service representatives were available to answer customer questions and met and discussed the RTP tariff with a number of customers. For interested customers, Kentucky Power prepared a spreadsheet calculating the customer's bill under their existing tariff and the RTP tariff. This spreadsheet was provided to the customer and allowed the customer to do sensitivity analysis concerning the amount of usage to be billed under the RTP tariff and also the impact that operational changes made by the customer would have on the customers billing.

WITNESS: Errol K Wagner

Kentucky Power Company

REQUEST

Refer to page 39 of Wagner Direct.

- a. Does Kentucky Power have customers that are participating in its COGEN/SPP I and COGEN/SPP II tariffs? If yes, provide the number of customers served under each tariff.
- b. Does Kentucky Power believe the potential exists within its service territory for additional waste energy projects? If so, describe the potential energy available through and economic feasibility of those projects.

RESPONSE

- a. No, Kentucky Power does not have any customers participating in the cogeneration and/or small power producer tariffs.
- b. At the present time, Kentucky Power along with any potential customer have not performed any formal in depth economic feasibility studies to quantify the potential or economic feasibility of such projects, if any, across KPCo's service territory.

WITNESS: Errol K Wagner

Kentucky Power Company

REQUEST

With reference to the discussion of the Smart Grid standard of EISA 2007 and American Electric Kentucky Power's ("AEP's") gridSMARTSM in Wagner Direct, address the following:

- a. Describe any transmission and distribution automation equipment being considered for deployment in Kentucky Power's service area.
- b. Describe any digital communications or any other smart grid technology being considered for deployment in Kentucky Power's service area.
- c. If not specifically discussed in parts a. and b. above describe the current plans for implementation of gridSMARTSM in Kentucky Power's service area. Include budgets and timelines if appropriate.

RESPONSE

- a. The following types of distribution automation schemes are being considered for deployment:

Distributed Intelligence schemes utilizing peer to peer communication. The S&C Electric Company's "IntelliTEAM II Automatic Restoration System" is an example of a distributed intelligence scheme. This modular system uses distributed intelligence and peer-to-peer 900 MHz spread spectrum radio communication to dynamically track system conditions on distribution circuits and provide fully automatic fault isolation and service restoration through operation of electronic reclosers and vacuum switches. The Dispatch Center is able to monitor and control these devices via Supervisory Control and Data Acquisition (SCADA).

Substation Controller Based Intelligence schemes utilizing a substation controller that monitors the status and loading of all devices and controls reclosers and switches to reconfigure the system to restore customers in unfaulted zones using capacity from adjacent circuits. In this scheme each device communicates to the substation controller. These schemes utilizing equipment from vendors Cooper and SEL have been installed in sister AEP Operating Companies and will be considered for deployment in Kentucky Power. These substation controller based intelligence schemes have been referred to as Decentralized Schemes in some earlier descriptions of gridSMARTSM deployments.

Centralized Intelligence Schemes utilizing the SCADA system to monitor the status and loading of all devices and to control reclosers and switches to reconfigure the system to restore customers in unfaulted zones using capacity from adjacent circuits. In this scheme each device communicates directly to the SCADA system. None of these schemes have been applied on the AEP System; however, they are being tested and evaluated and are likely to be considered for deployment in Kentucky Power.

AEP Transmission is currently evaluating three projects within the Kentucky Power service territory that would increase the level of automation to improve energy efficiency and system performance. These projects include:

- Adding circuit breakers to the shunt reactors at the Baker 765 kV Station.
- Modifying the Static Var System at the Beaver Creek Station.
- Modifying the Unified Power Flow Controller (UPFC) at the Inez Station.

b. The communications technology presently being utilized in Kentucky Power for gridSMARTSM deployments is 900 MHZ spread spectrum mesh technology. This technology uses a 900 MHZ radio in each device and repeaters along the circuit to assure adequate signal strength to all devices. The device radios also act as repeaters. The low power utilization (1W or less) combined with the “line of sight” nature of 900 MHZ communications typically only allows a distance of a mile with lesser distances in hilly or heavily treed areas.

Kentucky Power in conjunction with AEP Telecommunications and industry organizations such as Electric Power Research Institute (EPRI) and Edison Electric Institute (EEI) continues to evaluate additional technologies such as fiber optic, WiMax, commercial cellular, and Broadband over Power Line (BPL). The evaluations include functionality, cost, and cyber security. Some of these systems appear to offer higher levels of functionality; however, they are more costly and more difficult to implement than the 900 MHZ Mesh systems. It is likely that one or more of these technologies will develop further at a more attractive cost and be considered in the next few years. Of these, WiMax appears to be the most likely technology to develop the needed functionality, ease of use, and cost profile to be considered.

c. The original implementation schedule for Kentucky Power’s gridSMARTSM plan covered years 2008 to 2017. The goals include 3 MW of NaS battery installations, 12 MW of demand reduction through demand side management, energy efficiency, and demand response programs, installation of 185,000 smart meters, and progress with distribution automation installation where applicable. Given the current state of the economy, Kentucky Power is re-examining all timelines, current capital spend and forecasted capital spend. Kentucky Power may not be able to spend to the original projected levels but will continue to re-evaluate the situation.

WITNESS: Errol K Wagner

Kentucky Power Company

REQUEST

Identify any of the DSM programs approved for Kentucky Power that incorporate smart grid technology or gridSMARTSM. Describe how such technology is included in each such program.

RESPONSE

KPCo currently does not have any customer interface smart grid technology or gridSMARTSM on its system. Therefore, of the seven Commission-approved DSM programs KPCo actively promotes, none of them incorporate smart grid technology or gridSMARTSM.

WITNESS: Errol K. Wagner

Kentucky Power Company

REQUEST

With reference to the discussion of the conversion of Kentucky Power's residential meters to AMR technology in 2006 on page 29 of Wagner Direct, address the following:

- a. Describe the type of meters and other technology adopted for this conversion.
- b. Provide the number of meters converted.
- c. Describe the costs and benefits of the conversion.

RESPONSE

a and b. All single-phase, class 200A and class meters 320A (mostly residential) were converted to radio frequency (RF) meters or power line carrier (PLC) meters. Approximately 160,000 meters were converted. Approximately 144,000 were RF meters and approximately 16,000 were PLC. Electro-mechanical meters that were removed and the obsolete ones were retired.

Kentucky Power purchased mobile collectors to collect the readings for the RF meters. Readings are downloaded each day from the collector to the company meter reading system which is interfaced to the billing system. The PLC meters are collected via power lines back to substation equipment and are sent to the back office systems and processed by the billing system.

c. The total cost for the conversion of the meters was \$10.9 million. Major components of cost were Internal Labor - \$0.1M, Leases and other - \$0.1M, Meters and Material - \$7.4M, Outside Labor - \$1.5M and Construction Overheads - \$1.8M

Initially Kentucky Power had 26 full-time and 14 temporary meter reading positions. The conversion reduced these positions by 10 full-time and 14 temporary meter reading positions. Benefits associated with the project were estimated to be just under \$1.5M per year. The major financial benefits were reduction in labor, reduction in off-cycle reads, safety improvements and increased revenue from improved meter accuracy.

Another conversion benefit is Kentucky Power now actually reads over 99% of its meters on a monthly basis. Prior to the AMR conversion the actual reads were between 90% to 95% each

month. This reduction in estimated customer billings has eliminated many field trips and re-billings where estimations were inaccurate or customers were dissatisfied with the estimated billing. Also the AMR and PLC systems allow for capturing customer readings on a more frequent basis than monthly. PLC readings are captured every 27 hours and RF readings are captured every time a meter reader is within the vicinity of the meter. Sampling has shown that on average meter readings are captured approximately every six days. These readings are stored and can be used by the customer services employees when assisting customers with meter reading and billing inquiries.

WITNESS: Errol K Wagner

Kentucky Power Company

REQUEST

With reference to the discussion on pages 30 through 32 of Wagner Direct, of the three distribution automation demonstration projects in the Cannonsburg, Buckhorn and Inez areas, address the following:

- a. Describe the equipment and technology adopted for each project.
- b. Describe the costs and benefits of each project.

RESPONSE

a. All three distribution automation (DA) demonstration projects involve the use of S&C Electric Company's "IntelliTEAM II Automatic Restoration System". This modular system uses distributed intelligence and peer-to-peer 900 MHz spread spectrum radio communication to dynamically track system conditions on distribution circuits and provide fully automatic fault isolation and service restoration through operation of electronic reclosers and vacuum switches. Unused capacity on adjacent circuits is used to restore service to unfaulted segments by automatically transferring load to the adjacent circuits when conditions permit. The automatic switching is normally accomplished in one minute or less. Available restoration capacity is based on real-time loading information to maximize the utilization of the system. The system automatically returns to the normal configuration after voltage is re-established on the original circuit.

- b. The costs of the three DA demonstration projects are as follows:

Inez - \$558,360 (Actual)
Cannonsburg - \$1,059,216 (Actual)
Buckhorn - \$250,000 (Estimated)

These systems are expected to improve reliability for customers and reduce operating costs for the utility by eliminating many sustained outages for customers covered by the automated system. Pilot projects in other parts of the AEP System indicate a potential reduction of 50% or more in SAIFI for customers served by these systems. These DA systems will also provide for the remote manual operation of the associated line devices via Supervisory Control and Data Acquisition (SCADA).

The Inez Area DA project was in-service by the end of 2008. The project connects two circuits serving a total of 4,112 customers, of which 2,928 are covered by the DA system. These two circuits have been among the worst performers concerning reliability for Kentucky Power. They experienced an annual SAIFI of 7.13 and an annual SAIDI of 1050 in 2007 and 2008. Based on an analysis of actual outage information for these circuits, we estimate the full operation of this DA project will reduce the SAIFI to 2.85 (-60%) and SAIDI to 525 (-50%).

The Cannonsburg Area DA project is projected to be in-service by June 2009. The project includes three circuits serving a total of 5,139 customers, the majority of which are covered by the DA system. These three circuits have been among the worst performers for the Ashland District of Kentucky Power. The combined performance of these three circuits during a one year period from mid-2007 to mid-2008 was a SAIFI of 4.22 and SAIDI of 620. Based on the analysis done for the Inez Area DA project, we expect the operation of this DA project will reduce SAIFI to 1.69 (-60%) and SAIDI to 310 (-50%) for this heavily commercialized area of Boyd County.

The Buckhorn Area DA project is projected to be in-service by December 2009. The project connects remote sections of two circuits serving a total of 1,970 customers, of which 608 are covered by the DA system (including the village of Buckhorn). The Haddix/Canoe circuit has been one of the worst performing circuits in Kentucky Power. The combined performance of these two circuits during a one year period from mid-2007 to mid-2008 was a SAIFI of 4.56 and SAIDI of 840. Based on an analysis of actual outage information for these circuits, we estimate the operation of this DA project to reduce SAIFI to 2.74 (-40%) and SAIDI to 588 (-30%).

WITNESS: Errol K Wagner

Kentucky Power Company

REQUEST

Page 33 of Wagner Direct refers to the financial components of the EISA 2007 smart grid standard. Explain whether Mr. Wagner believes that the Commission should adopt a "carte blanche" approach regarding recovery of the costs of investments in smart grid projects as opposed to an approach in which a showing of the benefits of the investments will be required prior to authorization of rate recovery.

RESPONSE

Kentucky Power is not advocating a "carte blanche" approach but submits that it would be appropriate for the Commission to generally recognize customer and societal benefits that are produced through the deployment and implementation of smart grid investments, without the need for each electric utility to demonstrate the existence or quantification of such benefits without requiring the precise quantification of such benefits. Such a determination by the Commission would generally encourage utilities to prudently invest in smart grid technology and that is an appropriate goal under EISA 2007 and as a matter of Kentucky energy policy. When electric utilities deploy and implement smart grid technology, it is appropriate to allow recovery of prudently-incurred costs that are not otherwise offset by operational cost savings. Kentucky Power also submits that timely cost recovery is critical to enable utilities to deploy and implement smart grid technology.

WITNESS: Errol K Wagner

Kentucky Power Company

REQUEST

The American Recovery and Reinvestment Act of 2009 (Stimulus Bill") contains a number of spending and tax measures crafted to inject more aggregate demand into the nation's sagging economy. Some of those measures impact, among other things, energy infrastructure. Certain provisions of EISA 2007 have been amended to reflect the incentives enacted by the Stimulus Bill, particularly in the area of smart grid technology. Explain whether or not your opinion on smart grid investments has changed in light of these amendments.

RESPONSE

No. KPCo strongly supported Smart Grid investment prior to the passage of the Stimulus Bill and continues to support it. KPCo appreciates the fact the federal government has recognized the benefits of a smart grid investment. AEP's gridSMARTSM program will add automation and capabilities to allow customers to better manage their energy use and improve reliability; monitor and operate its system more efficiently and create fewer emissions; and prepare the system for new technologies that could greatly affect how power is generated, distributed and consumed.

WITNESS: Errol K. Wagner