

Exhibit No.:
Issue: Market Performance
Witness: Robert J. Camfield
Type of Exhibit: Direct Testimony
Sponsoring Party: Kansas City Power &
Light Company
Case No.: ER-2006-____
Date Testimony Prepared: January 27, 2006

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. ER-2006-____

DIRECT TESTIMONY

OF

ROBERT J. CAMFIELD

ON BEHALF OF

KANSAS CITY POWER & LIGHT COMPANY

**Jefferson City, Missouri
January 2006**

DIRECT TESTIMONY
OF
ROBERT J. CAMFIELD

Case No. ER-2006-_____

1 **Q. Please state your name, title, and business address.**

2 A. My name is Robert J. Camfield. I am a Vice President with Christensen Associates
3 Energy Consulting LLC. My business address is Suite 700, 4610 University Avenue,
4 Madison, Wisconsin, 53705.

5 **Q. What is the scope of your testimony?**

6 A. Kansas City Power and Light Company has retained Christensen Associates Energy
7 Consulting (CA Energy Consulting) to assess its utility performance, and to report the
8 findings of the performance study in the immediate docket. My testimony is focused on
9 the performance of Kansas City Power and Light Company in providing electric service
10 to retail consumers over recent years.

11 The testimony and accompanying exhibits review and summarize our study of KCPL's
12 performance for the consideration of the Missouri Public Service Commission. The
13 testimony goes on to discuss the evolution and status of wholesale power markets and,
14 associated with wholesale markets, the underlying causes of higher capital risks inherent
15 to the electricity industry. The testimony concludes with recommendations regarding the
16 incorporation of performance in the rate of return, within the current docket.

17 **Q. What guidelines regarding the scope, approach, technical methodology, and criteria**
18 **did Kansas City Power and Light provide to CA Energy Consulting, for assessment**
19 **and study of the Company's performance?**

1 A. None. The study was performed with complete independence. All aspects of the study
2 including scope, approach, criteria, and selection of peer groups of electric utilities were
3 determined at the discretion of CA Energy Consulting.

4 **Q. Please review your professional background and experience that qualifies you to**
5 **provide such recommendations.**

6 A. My experience covers a number of issues facing regulated industries. I have represented
7 agency staff, consumer advocates, independent energy companies, utilities, and
8 transmission companies before a number of regulatory agencies regarding issues of cost
9 of capital, cost performance and benchmarking, forecasts of electricity demand, retail
10 tariffs, cost of service allocation, generation planning, and transmission congestion. I
11 have been involved in the negotiation of power supply contracts and the terms for
12 franchise licenses. My overseas assignments are several including a comprehensive
13 market restructuring plan in Central Europe. I have served on national and regional
14 advisory panels, and I have advised electric companies on numerous policy and technical
15 issues. Innovations include two-part tariffs for transmission services, web-based self-
16 designing retail electric products, marginal cost-based cost-of-service methods, and
17 efficient pricing of distribution services. I have published articles in *The Electricity*
18 *Journal*, *IEEE Transactions on Power Systems*, and *CIGRE*. Currently, I am the Program
19 Director of EEI's Transmission and Market Design School.

20 I joined the Michigan Public Service Commission in 1976 as staff economist. My tenure
21 with the Michigan Commission involved retail electricity and natural gas pricing issues,
22 and I testified in several regulatory proceedings regarding cost of capital and retail gas
23 prices. I joined the New Hampshire Public Service Commission in 1979 as senior

1 economist, and held the position of chief economist beginning in 1981. In these
2 capacities, I was responsible for the development, administration, and training of the
3 economics staff. I oversaw economic analysis and the development and delivery of
4 testimony, and provided policy advice to the Commission on a variety of issues such as
5 construction work in progress, financial planning, and the determination of PURPA
6 Section 133 rates. I joined Southern Company in 1983, and held positions in several
7 departments including Pricing and Economic Analysis at Georgia Power Company,
8 Costing Analysis of Southern Company Services, and Southern Company's Strategic
9 Planning Group. In 1994, I joined Laurits R. Christensen Associates, Inc. as senior
10 economist, and currently hold the position of Vice President.

11 I am a graduate of Interlochen Arts Academy, and hold a Bachelor of Science Degree in
12 Business Administration from Ferris State University with an emphasis in Management,
13 graduating in 1969. I earned a Master of Arts Degree in Economics at Western Michigan
14 University in 1975, with a concentration in Monetary Theory and Policy.

15 **Q. Can you briefly review the market context of Kansas City Power and Light**
16 **Company?**

17 **A.** Yes. Kansas City Power and Light Company (KCPL) is a wholly-owned subsidiary of
18 Great Plains Energy, Inc. and provides electricity service in Kansas City, Missouri and
19 the surrounding region. KCPL's service territory covers metropolitan areas, small cities
20 and communities, and rural areas with concentrations of residential and small to mid-
21 sized commercial and industrial customers, along with some large customers. In
22 addition, KCPL is involved in the wholesale power markets of the Midwest region on a

1 substantial scale with relatively high concentrations of short- and intermediate-term
2 transactions.

3 **Q. You mention integrated service. What is the nature of KCPL's integrated**
4 **electricity service and what are the resources employed by KCPL to provide it?**

5 A. Integrated service refers to the package of generation, transmission, distribution, and
6 customer service activities as a bundled retail utility service. The resources used to
7 provide integrated service include capital, labor, material and service inputs, along with
8 primary and nuclear fuel. Capital resources are unusually large scale, very long lived,
9 and highly specialized. The scale of the facilities is necessary in order to obtain
10 comparatively low supply costs through economies of scale. Generation service refers to
11 the production or generation of electric energy and capacity to provide reserve services in
12 the form of regulation, spin, and supplemental reserve categories. Transmission and
13 distribution service (delivery) is the transport of power from KCPL's generation plants
14 where electricity is produced to customer facilities and premises where it is consumed.
15 Distribution also includes connection services involving voltage transformation and
16 meters. The provision of integrated service also includes customer service and sales
17 involves meter reading (metering), bill rendering, the process of responding to customer
18 inquiries regarding electricity service and bills, and the process of assisting customers in
19 the efficient use of energy and tariff choices.

20 KCPL is an established organization, and on-going integrated service on the scale of
21 KCPL involves substantial resource inputs that are closely coordinated operations.
22 Electricity cannot be stored, and the flow of electricity within electrical circuits, the
23 service itself, is governed by physical laws. This means that the operation of the

1 resources and facilities involved in the production and delivery of electricity must adhere
2 to a strict regiment and protocol in order for electricity to be provided reliably to retail
3 consumers. This involves the monitoring and control of power systems across the
4 integrated system in order to achieve an exact balance of supply with consumer demand
5 in real time. Real-time balance involves load following and occasional redispatch to
6 manage congestion, using a combination of reserve services as provided by committed
7 and non-committed units.

8 To provide generation services, KCPL has invested in and operates a sizable fleet of
9 nuclear, coal, and natural gas generating units. Generating units are large facilities with
10 specialized equipment as mentioned, including fuel storage and fuel handling facilities,
11 boilers and pressurized steam generators, turbines, cooling towers and condensers,
12 electric generators and exciters, transformers, and black start ancillary generators.
13 Generation is carried out in accordance with least-cost principles that apply to long-term
14 planning, fuel purchasing, maintenance scheduling, unit commitment, and dispatch
15 activities. In addition, these units must operate in a manner that complies with safety and
16 environmental regulations.

17 Transmission consists of high voltage transport facilities configured as meshed and radial
18 circuits. Facilities include towers, conductors, insulators, transformers, substations, and
19 various devices to control voltage and to ensure adequacy of reactive power.
20 Transmission also includes monitoring and control technologies and activities. Because
21 KCPL is a designated control area, it must adhere to the reliability guidelines of the North
22 American Electric Reliability Council (NERC). Electric distribution is linked to
23 transmission networks.

1 Distribution service provided by KCPL involves investment in and the operation and
2 maintenance (O&M) of distribution facilities including wires (lines, poles, substations
3 and equipment) and connections (customer transformer, meters). Distribution facilities
4 include underground and overhead transformers and conductors organized as radial and
5 loop circuits operated at a variety of voltages, as well as right-of-way, towers,
6 underground conduits, substation transformers, customer transformers, and compensation
7 technologies including capacitors and reactors. Facilities also include circuit switch gear
8 and monitoring and control technologies (SCADA) that help maintain power service and
9 expedite service restoration in the case of an occasional reliability failure or storm event.

10 In summary, integrated electric service, including the resources employed in the course of
11 providing it, is complex and is not to be taken lightly. Indeed, electric utilities like
12 Kansas City Power and Light must harness, organize, and utilize to the fullest the
13 specialized knowledge, skills, and capabilities of its staff in order for integrated electric
14 services, ever so vital to regional economies, to work. In carrying out its task of service
15 to the public, KCPL has achieved a high standard of performance particularly in long-
16 term productivity, which is the key measure of overall utility performance.

17 **Q. Please describe the input costs associated with providing integrated electricity**
18 **services.**

19 A. Costs of integrated service include operations and maintenance expenses and the charges
20 on capital investment, including the physical facilities (capital stock), inventory, and
21 working capital. As mentioned, the physical facilities associated with electricity services
22 require capital investment on a large scale due to the sheer size of the specialized
23 equipment employed in providing services. Also, the investment levels needed to satisfy

on-going growth in regional economic activity are rather indivisible and lumpy, a characteristic which requires special diligence and caution as regards to the management of capital risks.

Q. What is the general approach used in the study to gauge the performance of KCPL and the integrated services that it provides?

A. At the outset, an assessment of performance faces three fundamental study design issues including: 1) the perspective from which performance should be gauged; 2) the metrics that align with the identified perspective; and 3) the criteria that should be used to gauge relative performance for the defined metrics. For the immediate study, performance is gauged from the perspective of retail consumers and markets. In essence, the study addresses the question, “what has been the performance of KCPL in providing integrated electricity services over recent years, from the perspective of retail consumers?”

The study assesses the performance of KCPL in terms of *Performance Level*, where the performance of KCPL is measured within specific timeframes, and *Performance Trend* where KCPL’s performance is measured over time. For several metrics, KCPL’s performance is measured (benchmarked) with respect to samples of comparable electric utilities. The trend in performance, as measured by rates of change over time, is the most meaningful measure because it reflects the effectiveness of service providers in obtaining on-going improvement in operations and productivity.

Q. Please identify the metrics used in the study to assess performance.

A. For the immediate study, which is geared to assessing KCPL’s performance from the perspective of retail markets, the following categories of metrics have been selected:

- 1 • Overall Retail Prices refers to the level and general trend over recent years of the all-
2 in prices paid by retail consumers for the bundled electricity services provided by
3 KCPL.
- 4 • Total Factor Productivity (TFP) refers to the level and trends in resource inputs used
5 in providing outputs. The outputs of integrated services provided to retail markets
6 can assume several attributes such as the number of customers, the level of energy
7 (MWhs), and territorial peak demand (MWs).
- 8 • Cost Diagnostics refers to unit-specific or normalized costs, where operations costs
9 are gauged with reference to 1) capital inputs, and 2) aspects of the output such as
10 retail electricity sales (MWh), number of retail customers, and peak demand.
- 11 • Scorecard Metrics refers to selected elements of the *Balanced Scorecard*, which is the
12 internal self-appraisal process implemented by KCPL in recent years.

13 For the performance categories *Overall Retail Prices*, *Total Factor Productivity*, and
14 *Cost Diagnostics*, the assessment is conducted over the 1994 – 2004 timeframe, which is
15 broken into the periods 1994 – 1998 and 1999 – 2004. Generally speaking, greater
16 emphasis is given to the more recent five years, and trends rather than levels, because
17 year-over-year changes are more suggestive of the success of the actions, plans, and
18 activities of utilities to improve performance. Essentially, improvement is reflected in
19 unit-of-output cost changes across years. Total factor productivity captures the efficiency
20 of resource utilization and is arguably the most meaningful gauge of overall performance
21 for electric service providers. The *Balanced Scorecard*, on the other hand has only
22 recently been put in place and thus cannot reflect upon the experience over longer
23 timeframes.

1 **Q. You mention Kansas City Power and Light's Balanced Corporate Scorecard as an**
2 **internal performance assessment mechanism. Please describe.**

3 A. At the initiative of its Board of Directors, Kansas City Power and Light has implemented
4 an internal process of on-going performance appraisal referred to as the Corporate
5 Scorecard (Scorecard). KCPL's Scorecard provides a separate assessment of each of the
6 four major areas of integrated electric service, including generation (supply),
7 transmission, distribution, and customer services. Several Scorecard metrics are used in
8 our independent study of the overall performance by KCPL. These metrics are the
9 *Customer Satisfaction Index*, the *SAIDI Index of Reliability*, the *% of Customers Returned*
10 *to Service Within 2 Hours*, and *Customer Service and Call Speed of Response*.

11 The Scorecard system is comprehensive and, for each of the service areas, KCPL's
12 Scorecard includes a battery of metrics relevant to the specific area. For generation
13 services, KCPL's Scorecard recognizes 17 metrics; transmission recognizes 12 metrics,
14 distribution covers 23 metrics, and customer service metrics include 30 separately
15 defined elements. The metrics are grouped into categories referred to as Customer,
16 Financial, Internal, and a corporate category referred to as Learning and Innovation,
17 which includes safety. Some of the metrics are direct measures of the attributes of
18 electric services delivered to customers such as the System Average Interruption
19 Duration Index (SAIDI) and the national survey of customer satisfaction. Others are on-
20 going performance indicators aimed at the internal processes of the various organizations
21 and areas that together provide integrated electric service to customers. Example
22 indicators of process performance include direct operations and maintenance expenditure
23 per customer (a financial indicator for distribution operations); line clearance miles

1 completed on schedule (an internal indicator for distribution operations); OSHA
2 incidence rate (a corporate category indicator for generation services); and CellNet
3 monthly read percentage (a financial indicator for customer services).

4 Many of the metrics are measured and reported monthly, although some are only relevant
5 on an annual basis. For some metrics, KCPL assesses or benchmarks its performance
6 with reference to industry-wide experience, while other metrics gauge performance over
7 time and with reference to stated levels, goals, and targets. For many of the individual
8 metrics of the various service areas, the Scorecard references specific programs, action
9 plans, and strategies that have been or are intended to be implemented by KCPL to
10 improve performance, as gauged by the individual metrics.

11 **Q. Please continue in the description of the metrics, first focusing on Retail Electricity**
12 **Prices.**

13 A. Overall retail electricity prices, sometimes called all-in prices, are determined as the sum
14 of the annual retail revenues across the various market segments and customer classes
15 served, divided by the sum of retail electricity consumption, also across segments and
16 classes. Overall retail prices are measured in nominal terms. The retail price metric does
17 not and for the purpose at hand should not delve into the relative prices of individual
18 tariff elements and cost-of-service among market segments. Attempting to assess the
19 prices of KCPL at a tariff level raises complicated and not easily resolved problems of
20 comparability among utilities including differences in: 1) criteria to qualify for service
21 provided under individual retail tariffs; 2) energy and demand price blocks within tariffs;
22 and 3) principles underlying how individual tariff prices are determined. In addition,
23 customer composition is a determining factor; utilities with larger shares of residential

1 and commercial customers will generally have higher prices than utilities with a high
2 share of industrial load in the total mix of customers.

3 Total Factor Productivity (TFP) is a measure of the efficiency with which integrated
4 electricity services are provided. Essentially, TFP addresses the question, “How well is a
5 utility using its resources?” TFP is determined for each of the unbundled services
6 including generation, transmission, distribution, and customer service, and for integrated
7 service as a whole. In turn, generation involves the several generation segments
8 including fossil steam, nuclear, hydro (including conventional, run-of-river, and pumped
9 storage), fossil non-steam generation, and purchased power. Customer service includes
10 metering and billing, customer service, and sales.

11 For each of the four elements of integrated electricity service, including the individual
12 generation technology classes, the implied physical quantities of inputs of capital, labor,
13 fuels, and quasi-materials (other inputs) are estimated.

14 Estimates of TFP involve the aggregation of inputs and outputs for utilities and for
15 comparable utilities. The methodology to determine TFP is more fully described in the
16 technical discussion paper, as attached.

17 Cost Diagnostics refers to cost categories normalized according to other inputs such as
18 estimates of the capital stock, and to levels of the services provided (MWh of energy),
19 MWs of peak demand, number of customers served. The specific cost diagnostics
20 incorporated into our study of performance are as follows:

- 21 • Generation Services:
 - 22 ○ Real capital stock, per unit of energy supplied (MWhs).
 - 23 ○ O&M expenses, per unit of investment in generation facilities.

- 1 • Transmission Service:
 - 2 ○ Real capital stock, per unit of peak demand (MWs).
 - 3 ○ O&M expenses, per unit of investment in transmission facilities.
- 4 • Distribution Service:
 - 5 ○ Real capital stock, per unit of peak demand.
 - 6 ○ Real capital stock, per customer served.
 - 7 ○ O&M expenses, per unit of investment in distribution facilities.
- 8 • Customer Services:
 - 9 ○ O&M expenses, per customer served.

10 Scorecard Metrics incorporated into the study of KCPL's performance include the results
11 of the J. D. Power national survey of *Customer Satisfaction*; delivered service reliability
12 measured as the *System Average Interruption Duration Index* (SAIDI); and customer
13 service measured as the expedience with which incoming customer inquiries are
14 answered by KCPL. The SAIDI measure of reliability is equal to the total interruption
15 time of power outages divided by the average number of customers served.

16 **Q. You have mentioned that, for the defined metrics, the assessment process involves**
17 **criteria to gauge relative performance. Please discuss.**

18 A. The performance assessment utilizes the identified metrics. As mentioned, the metrics
19 should be relevant to and align with the perspective of the identified stakeholders—retail
20 consumers for the immediate study. However, there is no completely objective basis to
21 rate or gauge performance. For this reason, the study of the performance of KCPL is
22 assessed with reference to the performance of other utilities. That is, the performance of
23 the comparable utilities provides the basis to gauge the performance of KCPL.

1 **Q. For the comparison utility metrics how is the group of comparable utilities (peer**
2 **group) determined?**

3 A. Along with the broad base of electric utilities, a peer group of comparable electricity
4 service providers is identified for purposes of gauging the utility performance of KCPL.
5 The peer group is determined using cluster analysis techniques. Also, KCPL is compared
6 to utilities that reside in the region that surrounds its service territory.

7 The methodology used to determine the group of comparable service providers is referred
8 to as hierarchical clustering, where investor-owned utilities are organized into a peer
9 group according to five pre-defined cluster variables. The variables used to cluster the
10 utilities are the share of nuclear assets in total assets where assets are measured as the real
11 capital stock; the share of wholesale energy sales in total sales (MWh); a measure of
12 market density; the level of energy sales (MWh); and the number of retail customers
13 served. The final two cluster variables are scale variables where the number of retail
14 customers, when coupled with MWh sales, tends to implicitly capture the load factor of
15 the utilities, at least to the degree that smaller customers have lower load factors than
16 larger customers. Because load factor is negatively correlated with average cost, holding
17 other factors constant, it is appropriate to group (cluster) the utilities using these two
18 output variables that capture the relative scale of operation of the utilities. The cluster
19 variables reflect the 2003 experience of the utilities.

20 **Q. What are the data sources used in the study of KCPL performance?**

21 A. The Balanced Scorecard information is reported internally by the various departments
22 and organizations of KCPL. The other performance metrics including retail prices, total
23 factor productivity, and cost diagnostics rely upon the revenue, sales quantities, costs, and

1 input price data for the period 1994 – 2004. However, the development of the initial
2 balance of the real capital stock for 1994 involves data reaching back to 1965. The
3 revenues, sales quantities, capital assets, annual investment amounts, non-fuel operating
4 expenses, purchased power, labor compensation, fuel costs, peak demands, depreciation
5 rates, and property taxes of electricity service providers are reported to the Federal
6 Energy Regulatory Commission. The data are available in the public domain, and the
7 immediate study draws upon the reported data for 239 utilities. The study uses primary
8 fuel price data including regional price differences, as obtained from the Energy
9 Information Administration. Capital input prices are obtained from the survey of utility
10 cost experience conducted and published by Handy-Whitman, and are specific to the
11 various types of capital employed in providing integrated services. The price series for
12 quasi-material inputs is the U.S. GDP deflator.

13 **Q. For the defined metrics, please review the performance of Kansas City Power and**
14 **Light Company.**

15 A. For the defined metrics, Kansas City Power and Light has performed exceptionally well.
16 Pages 1 and 2 of Exhibit 2 show the level and trends in annual residential prices and
17 overall retail prices for the industry, the comparison utility groups, and for KCPL. As
18 can be observed, KCPL residential prices were above the industry average at the
19 beginning the period, 1994. KCPL largely through its substantial rate of productivity
20 growth, has steadily reduced the effective prices paid by retail consumers and, as a
21 consequence, KCPL is currently very competitive. As shown on page 2 of Exhibit 2,
22 overall retail prices show similar declines, where prices for retail service provided by

1 KCPL have declined about 1.5% faster than that of the industry, 1.75% faster than the
2 peer group, and 0.70% faster than utilities in the contiguous region.

3 Exhibit 3 shows the study results for Total Factor Productivity. As mentioned, TFP is a
4 comprehensive measure of productivity that accounts for all of the inputs used to provide
5 electricity services. Total Factor Productivity is the single most important measure of
6 performance, and Exhibit 3 compares the TFP performance of KCPL with the TFP
7 performance for the industry, the peer group, and utilities of the surrounding region. As
8 mentioned, TFP analysis involves the determination of output levels, and inputs
9 measured and estimated for the types of inputs (fuel, capital, labor, quasi-materials) for
10 each of the service categories.

11 Page 1 of Exhibit 3 shows the TFP performance in generation, transmission, and
12 distribution operations. Since generation operations are the largest segment of electric
13 services, generation TFP will be a major determinant of overall TFP performance for
14 integrated services. Over 1994 – 2004 timeframe, KCPL realized a rate of TFP growth of
15 2.5%, which substantially exceeded the TFP growth achieved by the industry (0.1%),
16 peer group (-0.5%), or the contiguous area (0.5%). The productivity of KCPL in
17 generation services is near the top of the industry for the 1994 – 2004 and 1998 – 2004
18 timeframes. For the earlier years 1994 – 1998, KCPL's performance is generally good,
19 though it is largely limited by exceptionally slow growth of energy sales. All sectors
20 showed improved TFP growth through 1998; following 1998, however, KCPL's TFP
21 growth contrasts sharply with the TFP decreases found in the other sectors.

22 Since transmission operations are a much smaller component of retail electric services,
23 these results are a smaller determinant of overall TFP performance. KCPL transmission

1 TFP declined 0.9% per year over the 1994 – 2004 period, while the other groups
2 experienced TFP increases. Differences between KCPL and the other sectors were
3 largest before 1998, as all comparison groups including the peer group saw TFP declines
4 after 1998. For distribution operations, KCPL's TFP growth is nearly double the TFP
5 growth for the comparison groups. Specifically, KCPL TFP increased at an average
6 annual rate of 1.5%, while peer group TFP and contiguous area TFP increased 0.8% per
7 year, and industry wide TFP increased 0.7% per year. As is the case with transmission
8 TFP, all sectors showed larger TFP gains before 1998 than they did after 1998.

9 Page 2 of Exhibit 3 presents the total factor productivity study results for customer
10 services and for integrated services as a whole. As mentioned, customer service includes
11 customer accounts, customer service and information, and sales operations categories.
12 Once again, KCPL's TFP growth greatly exceeded that achieved by the industry, the peer
13 group, and the contiguous area. Particularly noteworthy is the fact that KCPL's TFP for
14 customer service operations increased at an average annual rate of 6.4% after 1998, more
15 than doubling the rates obtained by the industry. Also shown on page 2 is TFP analysis
16 for integrated services. Since KCPL outperformed the industry, peer group, and
17 contiguous region in most elements, we expect that KCPL's company wide performance
18 would demonstrate similar high levels. This is indeed the case. As shown, KCPL's
19 company wide TFP has increased at an average annual rate of 2.6% for 1994 – 2004.
20 This far surpasses the 1.0% per year rate achieved by the contiguous area. The industry
21 as a whole realized a 0.6% increase in TFP, while the peer group experienced no change
22 over the 1994 – 2004 period.

1 Exhibit 4 shows the levels and trends for various cost diagnostics. Pages 1-4 provide
2 measures of the relative concentration of capital per unit of output for generation,
3 transmission, and distribution services. The measure of output is specific to each of the
4 service categories, and reflects the most relevant attribute of service for the category. For
5 generation, the relevant measure of output is energy (MWhs). Hence, the intensity of
6 capital use in generation is normalized (divided by) the quantity of MWhs produced. In
7 the case of transmission and distribution services, a relevant measure of output is peak
8 demand, which is also a main driver of power delivery services. Accordingly, the
9 measure of capital employed in transmission and distribution, for each of the utilities
10 used in the study including KCPL, is normalized by peak demands. Distribution capital
11 is also measured with respect to the level of customers served because, in addition to
12 peak demand, the number of customers is a major driver of investment in distribution
13 services.

14 Exhibit 4, page 1 (generation services) shows that KCPL uses capital more intensively
15 than the comparison groups, largely because of a high share of nuclear power within its
16 generation mix. The comparison groups and KCPL reveal steady declines in the use of
17 capital per unit of output during all periods, which contributes to productivity, suggesting
18 increases in resource use—i.e., greater output per unit of input. For the more recent
19 timeframe, 1998 – 2004, and the entire period (1994 – 2004) KCPL has obtained a
20 greater use of capital utilization than the industry, peer group, or the contiguous region.
21 While KCPL's level of capital use in generation is comparatively high because of the
22 presence of nuclear power, KCPL's gains in resource utilization sharply narrowed the

1 difference with respect to the other utilities by 2004. KCPL reduced the amount of
2 generation capital per megawatt-hour at a rate of 3.40% per year over the entire period.

3 Page 2 of Exhibit 4 presents the intensity of capital use in transmission, while page 3
4 presents the capital intensity measure for distribution. Whereas KCPL uses less
5 transmission capital per unit of peak demand than the comparison groups, KCPL uses
6 comparatively more distribution capital. The sharp difference in the relative levels of
7 transmission and distribution capital stated on a per-unit-of-output (MW) basis suggests
8 differences in the classification of power delivery facilities as transmission and
9 distribution. As mentioned earlier, it is more important to focus on the general trends,
10 where KCPL has experienced substantial gains at rates that are roughly equivalent to or
11 better than the industry, the peer group, and the utilities of the contiguous region.

12 Page 4 of Exhibit 4 shows O&M performance for distribution services on a per customer
13 basis. Page 5 of Exhibit 4 presents relative fuel costs and, as can be seen, KCPL has a
14 large advantage in performance level over all periods and in trends over 1998 – 2004 and
15 1994 – 2004. The final set of cost diagnostics, as shown on pages 6 through 9 of Exhibit
16 4, present the intensity of operations and maintenance (O&M) expenses per unit of
17 capital. For generation services, KCPL's non-fuel O&M levels are at the lower side of
18 the performance levels for the comparison groups through the year 2000, and are below
19 the comparison group from 2000 forward. The trends in non-fuel O&M expenses per
20 unit of capital reveal that KCPL's experience is fairly high over the 1994 – 1998
21 timeframe, to be followed by sharply improved performance for 1998 – 2004, which is
22 also the case for the utilities of the surrounding region. Over the entire period, the
23 contiguous region out-performed KCPL by 0.60%. Pages 7 and 8 of Exhibit 4 present

1 the results for transmission and distribution. KCPL's O&M expenses in transmission are
2 fairly low until 2004 and, as with O&M expenses for other utilities of the region, show
3 substantial increases over the entire period. For distribution, KCPL's O&M expenses are
4 equivalent to that of the industry, the peer group, and the contiguous region, on a unit of
5 capital basis, and are rising more rapidly than other utilities on average. While it is useful
6 to examine individual cost diagnostics of power delivery, the most relevant measure of
7 overall performance is the total bundle of resources employed including both capital and
8 O&M expenses and, on the basis, KCPL demonstrates substantial gains in resource
9 utilization, and productivity as well.

10 In terms of the customer service area, the operations and maintenance costs per customer
11 served, for KCPL at the beginning of the study period, were at a level equivalent to the
12 industry and the comparison groups. This advantage was eliminated in the late 1990's.
13 Since then, however, the very large gains in cost performance have sharply reduced
14 KCPL's customer service operations and maintenance costs by the end of the study
15 period, stated on a per customer basis. Over the entire study period, KCPL reduced
16 customer service operations and maintenance costs substantially, and has sharply out-
17 performed the industry and the comparison groups. For the industry, customer service
18 operations and maintenance costs per customer increased over the study period, although
19 only slightly.

20 Exhibit 5 shows results for four key indicators of KCPL's Corporate Scorecard process.
21 As can be seen, KCPL has satisfied its target levels for *Customer Satisfaction*, and we
22 observe increases in performance according to the metric % *Customers Returned to*
23 *Service in 2 Hours*, where performance has increased from 72% for 2004 to 79% for

1 2005. Similarly, *Customer Service and Call Speed of Response* also shows slightly
2 improved performance between 2004 (75%) and 2005 (77%). On the other hand, the
3 *System Average Interruption Duration Index* metric shows that, as expected at November
4 2005, the Company would fall short of the target level of 60.8 for 2005, with an
5 estimated score of 56.4. The SAIDI index of reliability is sensitivity to random weather
6 events, and reliability performance should only be gauged over several years.

7 **Q. Please summarize the results of the performance study of Kansas City Power and**
8 **Light Company.**

9 A. Our analyses reveal that, for the defined metrics most relevant to retail markets, with
10 particular emphasis on the trends over time, Kansas City Power and Light has performed
11 near the top of the electric services industry for the 1994 – 2004 timeframe. As I
12 discussed earlier, the most important and revealing measure of overall long-term
13 performance is total factor productivity, which is literally process efficiency; indeed,
14 growth in productivity along with innovation is the key driver of the success of firms,
15 industries, and economies. For these years, Kansas City Power and Light has achieved
16 one of the highest levels of productivity improvement in the U.S. electric industry.

17 From the outset, the purpose of the study was to perform an independent and objective
18 assessment of KCPL's performance. Accordingly, the study approach takes a fairly
19 comprehensive view in its assessment of performance, including the relative costs,
20 productivity, and service prices of KCPL with respect to comparable electricity service
21 providers. To ensure comparability, the assessment relies to a substantial extent on data
22 and information that is available within the public domain. The study results including
23 the quantitative assessment as well as other evidence affirm that, without question,

1 Kansas City Power and Light Company has obtained a very high level of performance
2 from the perspective of retail consumers over recent years.

3 **Q. Please review recent changes in the electric utility industry and how are such**
4 **changes impacting capital risks, the cost of equity, and the need for an adequate rate**
5 **of return.**

6 A. It is perhaps useful to begin with a review of events, changes, and the renewed challenges
7 that confront the electricity services industry. Generally, structural change refers to
8 changes in government policy, technology, and market rules. Most relevant to the
9 electric industry today are the changes that reach back to the Public Utility Regulatory
10 Policies Act (PURPA) of 1978. PURPA incorporated a number of provisions. In
11 particular, PURPA established so-called Qualifying Facilities (QFs) status, and assigned
12 the authority for determination of QF status to the Federal Energy Regulatory
13 Commission (FERC). QF status is set aside for certain renewable resources, and is
14 mostly targeted at cogeneration facilities. Once awarded QF status, such facilities are
15 entitled to sell power to the incumbent service provider at avoided costs, as determined
16 by state regulatory authorities. QF generators evolved and expanded to include
17 wholesale power merchants referred to as Non-Utility Generators (NUGs) that, within a
18 few years, became a sizable sector of wholesale markets. In brief, QFs allowed for
19 market entry into wholesale generation services, and ushered in an era of competition.
20 The introduction of NUGs such as AES Corporation and Sythe Industries appeared to be
21 successful and, given the comparatively high cost of embedded generation of the
22 incumbent service provider at the time, the notion of competitive generation services held
23 substantial appeal during the late 1980s. The apparent success of competitive entry

1 coupled with the growing interest in regulatory reform gave rise to Title VII of the
2 Energy Policy Act of 1992, which created Exempt Wholesale Generators (EWGs) and
3 required incumbent transmission service providers, mostly integrated electric utilities, to
4 open their networks to third parties that wished to wheel power among wholesale power
5 suppliers and purchasers.

6 Though initially small, wholesale transaction volume expanded rapidly beginning about
7 1996. Flourishing wholesale markets by 1997 precipitated a number of private
8 generation companies, many of which were subsidiaries of integrated electric companies,
9 and power trading operations run by commodity trading firms such as Williams Energy,
10 Morgan Stanley, and Enron to name a few. Even public authorities such as TVA
11 established wholesale trading floors. During this timeframe, the sheer volume of
12 transactions coupled with the expanding growth of retail loads due to the robust economy
13 of the late 1990s, challenged system reliability within both the Eastern and Western
14 Interconnections. Importantly, the narrowing of supply margins and the appearance of
15 congested networks, as evidenced by a sharp rise in Transmission Load Relief (TLR)
16 actions of transmission providers, caused a huge increase in the volatility in regional
17 wholesale market prices, thus exposing buyers and sellers (including utilities, and
18 investors in utilities and energy companies involved in wholesale power markets) to
19 sharply higher risks.

20 Market participants including some regulators, perceived the need for the reform of
21 wholesale market arrangements in order to obtain price discovery, to ensure efficient
22 management of congestion, and to achieve efficient transaction scheduling. In response,
23 the Federal Energy Regulatory Commission expended a decade in implementing waves

1 of market reform, as evidenced in key initiatives including the Open Access
2 Transmission Tariff of Order 888, OASIS Sites of Order 889, the Capacity Reservation
3 Tariff (CRT), Order 2000 giving rise to Regional Transmission Organizations (RTOs),
4 and Standard Market Design (SMD) of 2002, which now appears to be effectively closed.
5 The experience of the industry regarding market restructuring which assets sales by
6 incumbent utilities, a much larger presence of independent generation, and highly volatile
7 wholesale markets, has not gone unnoticed by shareholders. The essential point is that
8 perceived risks are currently higher for the industry than in the past. A few highlights are
9 noteworthy:

- 10 1) The restructuring of the wholesale electricity market may potentially provide
11 gains to retail consumers. Getting there is proving to be challenging. Key
12 attributes of power systems, including non-storability and network externalities,
13 imply that wholesale power prices can demonstrate unusually high levels of price
14 volatility. Volatility of market prices increases risks, real and perceived, of
15 investment in the industry.
- 16 2) Transmission issues abound. Concerns include potential overlap in
17 jurisdiction regarding transmission, the implications for recovery of
18 investment cost in transmission, and the impact of transmission costs on the
19 earnings of service providers. As an example, under mandates contained in
20 the Energy Policy Act of 2005, the FERC will apparently assume an enlarged
21 role in electric reliability and the expansion of transmission networks at the
22 regional level. Transmission limits can continue to impede delivery over the
23 foreseeable future.

1 3) There is significant uncertainty about the future path of the industry. At one
2 point, it appeared that a structure involving locational pricing, unbundled
3 generation services, and an overlay of financial transmission rights was the
4 only feasible path for wholesale market design. However, that view may not
5 represent a consensus, and there is considerable uncertainty regarding the path
6 and end state of wholesale market restructuring. Locational markets have
7 been adopted in some regions of U.S. markets. However, there appears to be
8 considerable interest in alternative approaches in the organization of
9 wholesale markets at this time.

10 I wish to emphasize that investors understand risks, and appreciate the various
11 dimensions of risk within the electricity industry, particularly where considerable new
12 construction is on the horizon. While the outcomes regarding some of these issues are
13 uncertain, the implications are clear. Specifically, private investors, commercial banks,
14 mutual funds, investment bankers, and financial rating agencies are increasingly
15 concerned about financial stability in view of the risks discussed above. Arguably, the
16 electricity services industry as whole carries larger business, regulatory, and financial
17 risks currently than in previous eras.

1 **Q. Do these considerations regarding investment in the electric industry warrant the**
2 **concern of the Missouri Public Service Commission and the setting of electricity**
3 **prices?**

4 A. Yes, absolutely. As we discuss in detail above, the financial risks harbored by investors
5 relate to the more uncertain business and regulatory environment confronting electricity
6 service providers currently. These higher risks are present at a time when KCPL must
7 raise substantial amounts of external capital in order to fund its investment needs.

8 **Q. Are there other considerations that the Missouri Public Service Commission should**
9 **use to determine the return on equity?**

10 A. Yes. I encourage the Commission to make special recognition of the high standard of
11 productivity and overall performance achieved by KCPL over recent years, in its
12 deliberation of the return on equity and revenue requirement in the immediate docket.
13 The Company has adopted and implemented business practices and procedures that have
14 enabled the Company to sustain a clear cost advantage through high growth and
15 improvement of productivity. In the long term, the actions of the Company translate
16 directly into benefits to retail customers through lower customer bills, which have been
17 and are realized without compromise to delivered reliability and service.

18 **Q. Are there circumstances where the Commission should depart from estimates of the**
19 **cost of equity capital in setting the rate of return, and are such circumstances**
20 **currently present?**

21 A. Yes. In determining the rate of return level, the Commission should take a broad view
22 that fully accounts for the long-term interests of retail consumers and the region, while

1 also providing an adequate and fair return to investors. The interests of the community
2 are particularly important in KCPL's immediate filing in view of the resource plan.

3 What sets this situation apart, however, is the strong, positive link and interdependency
4 between the interests of the region, and adequate returns to shareholders.

5 More specifically, the schedule for implementation of KCPL's resource plan, as reached
6 through its collaborative process with stakeholders, is vital to retail markets and
7 consumers served by the Company, and to the larger region. As discussed elsewhere in
8 our filing, the resource plan requires substantial investment. To raise the needed external
9 capital at reasonable terms, the Company must satisfy defined credit requirements during
10 current periods for financial reporting. During these periods, however, the Company and
11 investors face considerable uncertainty and risks in the form of outside events—gas
12 markets, weather, and unit availability to name a few. Consequently, it is absolutely
13 necessary that the Commission set the authorized return at a sufficient level, so that the
14 construction program can proceed without delay in the presence of uncertain future
15 events. In short, adequate rate of return provides the necessary means to manage and
16 accommodate risks, thus enabling the implementation of the new resources in timely
17 fashion.

18 **Q. If the Commission is to depart from the estimated cost of capital in setting the**
19 **authorized rate of return, how is that to be implemented? What mechanism is**
20 **available to the Commission?**

21 **A.** A potential mechanism is to incorporate a performance allowance into the rate of return.
22 A performance allowance is of substantial value to retail consumers in the current

1 timeframe, where the Company is in the midst of implementing the Resource Plan. The
2 benefits arising from an allowance in the rate of return assume three dimensions:

- 3 1. Management and accommodation of Risk. The allowance contributes to the resource
4 plan by providing assurance that the returns to capital are sufficient to enable the
5 Company to raise new capital on reasonable terms, in view of the heightened
6 uncertainty associated with construction and other factors, such as those discussed
7 above.
- 8 2. Endorsement. An allowance by the regulatory agency overseeing electricity markets
9 in Missouri conveys to capital markets that the regulators are behind the resource
10 plan, as assembled and agreed to by stakeholders and KCPL, and approved by the
11 Commission.
- 12 3. Alignment of Long-term Performance with the Interests of Consumers. An allowance
13 identifies the importance of market performance by utilities, as a basis for realized
14 returns to capital.

15 **Q. If the Missouri Public Service Commission is to consider a performance allowance**
16 **for the rate of return on common equity, what criteria and guideline should the**
17 **Commission use to determine the level for the allowance?**

18 **A.** We recommend that the Commission apply a rational principle and criterion in the
19 determining the appropriate level of a performance allowance inclusion within the rate of
20 return. In brief, the Commission should ensure that the net benefits to electricity
21 consumers, as obtained by the allowance, are sufficient to cover the allowance itself. By
22 satisfying this criterion, consumers and the State of Missouri are better off, and thus well
23 served. Second, the allowance should be of sufficient magnitude that it provides real

benefits as mentioned above, and is not lost in the noise of routine business operations. In essence, the Commission should establish an allowance that is adequate to the task at hand, in the suggested range of 50 – 100 basis points.

Q. Can you please summarize your analysis, findings, and recommendations as regarding the performance assessment of Kansas City Power and Light and the implications for the return on equity recommendations?

A. Yes. Kansas City Power and Light, as our study amply demonstrates, has obtained a very high standard of market performance from the perspective of retail consumers. Our performance study utilizes four categories of metrics. The most important of these is total factor productivity, which captures the on-going improvement in resource efficiency and utilization. By this measure, KCPL has achieved a high standard of overall performance during the 1994 – 2004 timeframe. The Commission should recognize the performance of KCPL and take account of the special circumstances attending the Resource Plan and the need for external capital for its implication. To this end, I recommend that the Missouri Public Service Commission consider the incorporation of a performance allowance into the allowed rate of return on equity for the applicant Kansas City Power and Light, in the determination of the revenue requirement in the current docket.

Q. Does this conclude your testimony?

A. Yes, it does.

In the Matter of the Application of Kansas City
Power & Light Company to Modify Its Tariff to
Begin the Implementation of Its Regulatory Plan

**STATE OF WISCONSIN)
COUNTY OF DANE)**

1. My name is Robert J. Camfield. I work in Madison, Wisconsin, and I am employed by Christensen Associates Energy Consulting LLC as Vice President

3. I have knowledge of the matters set forth therein. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded, including any attachments thereto, are true and accurate to the best of my knowledge, information and belief.

Subscribed and sworn before me this 27 day of January, 2006.

My commission expires: June 22, 2008

**Names of Utilities Incorporated In the Performance Study
(Industry Wide, Peer Group, and Contiguous Region)**

Industry Wide

Alabama Power Company
 Allete, Inc.
 Appalachian Power Company
 Aquila, Inc.
 Arizona Public Service Company
 Avista Corporation
 Black Hills Power, Inc.
 Carolina Power & Light Company
 Central Vermont Public Service Corporation
 Cleco Power LLC
 Columbus Southern Power Company*
 Dayton Power and Light Company*
 Duke Energy Corporation
 El Paso Electric Company
 Empire District Electric Company
 Entergy Arkansas, Inc.*
 Entergy Gulf States, Inc.
 Entergy Louisiana, Inc.
 Entergy Mississippi, Inc.*
 Entergy New Orleans, Inc.
 Florida Power & Light Company
 Florida Power Corporation
 Georgia Power Company
 Green Mountain Power Corporation
 Gulf Power Company
 Hawaiian Electric Company, Inc.
 Idaho Power Company*
 Indianapolis Power & Light Company*
 Kansas Gas and Electric Company
 Kentucky Utilities Company*
 Louisville Gas and Electric Company
 MDU Resources Group, Inc.
 Mississippi Power Company
 Monongahela Power Company*
 Nevada Power Company*
 Northern Indiana Public Service Company*
 Northern States Power Company
 (Minnesota)
 Ohio Power Company
 Oklahoma Gas and Electric Company*
 Otter Tail Corporation
 Portland General Electric Company*
 PSI Energy, Inc.
 Public Service Company of Colorado
 Public Service Company of New Mexico

Public Service Company of Oklahoma*
 Sierra Pacific Power Company
 South Carolina Electric & Gas Company*
 Southern Indiana Gas and Electric Company
 Southwestern Electric Power Company*
 Southwestern Public Service Company*
 Tampa Electric Company*
 Tucson Electric Power Company
 Union Electric Company
 Virginia Electric and Power Company
 Westar Energy, Inc.

Peer Group

Columbus Southern Power Company
 Dayton Power and Light Company
 Entergy Arkansas, Inc.
 Entergy Mississippi, Inc.
 Idaho Power Company
 Indianapolis Power & Light Company
 Kentucky Utilities Company
 Monongahela Power Company
 Nevada Power Company
 Northern Indiana Public Service Company
 Oklahoma Gas and Electric Company
 Portland General Electric Company
 Public Service Company of Oklahoma
 South Carolina Electric & Gas Company
 Southwestern Electric Power Company
 Southwestern Public Service Company
 Tampa Electric Company

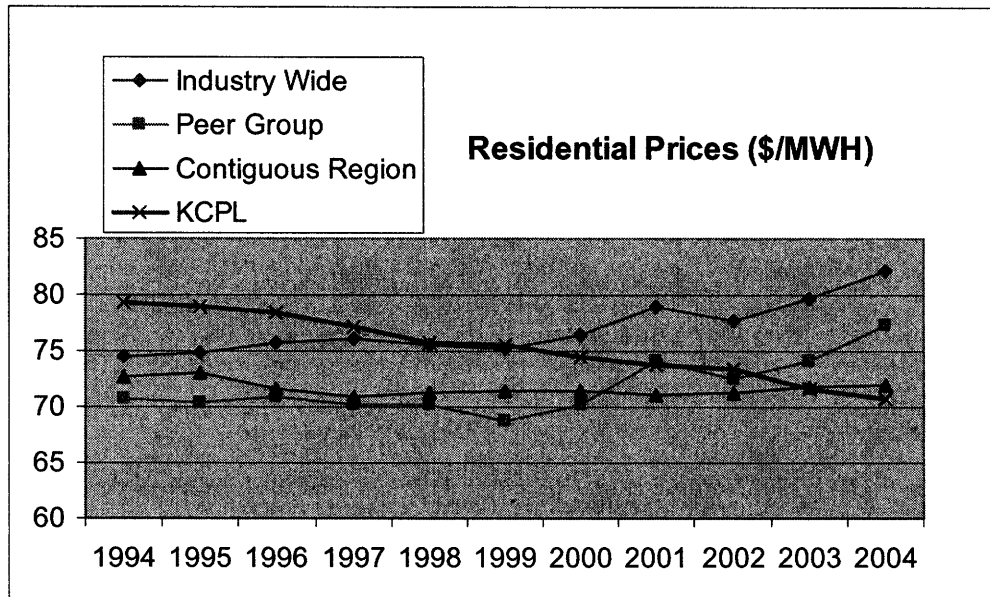
Contiguous Region

Aquila, Inc.
 Empire District Electric Company
 Kansas Gas and Electric Company
 Oklahoma Gas and Electric Company
 Union Electric Company
 Westar Energy, Inc.

*Also a member of the Peer Group.

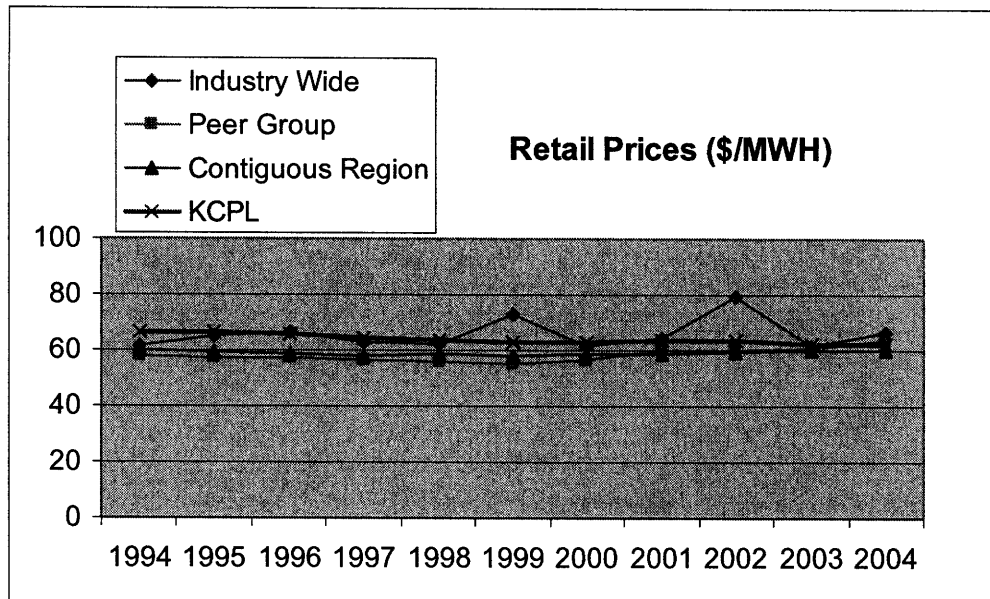
Retail Price Performance

	Annual Rate of Change		
	1994-1998	1998-2004	1994-2004
Industry Wide	0.36%	1.40%	0.98%
Peer Group	-0.18%	1.61%	0.90%
Contiguous Region	-0.47%	0.15%	-0.09%
KCPL	-1.14%	-1.12%	-1.13%



Retail Price Performance

	Annual Rate of Change		
	1994-1998	1998-2004	1994-2004
Industry Wide	0.47%	1.14%	0.87%
Peer Group	-0.73%	2.15%	1.00%
Contiguous Region	-0.61%	0.37%	-0.02%
KCPL	-1.34%	-0.35%	-0.74%



Productivity

Generation TFP Growth Rates									
	1994-1998			1998-2004			1994-2004		
	TFP	Output	Input	TFP	Output	Input	TFP	Output	Input
Industry Wide	3.0%	3.9%	0.9%	-1.8%	-0.2%	1.5%	0.1%	1.4%	1.3%
Peer Group	2.5%	3.7%	1.2%	-2.6%	-1.6%	1.0%	-0.5%	0.5%	1.1%
Contiguous Area	1.3%	2.6%	1.3%	-0.1%	1.3%	1.4%	0.5%	1.8%	1.4%
KCPL	1.6%	0.6%	-1.1%	3.1%	3.7%	0.5%	2.5%	2.4%	-0.1%

Transmission TFP Growth Rates									
	1994-1998			1998-2004			1994-2004		
	TFP	Output	Input	TFP	Output	Input	TFP	Output	Input
Industry Wide	2.0%	1.9%	0.0%	-0.6%	0.6%	1.1%	0.4%	1.1%	0.7%
Peer Group	2.5%	2.2%	-0.3%	-1.5%	0.4%	2.0%	0.1%	1.2%	1.1%
Contiguous Area	6.2%	6.0%	-0.2%	-2.0%	0.3%	2.3%	1.3%	2.6%	1.3%
KCPL	0.3%	2.0%	1.7%	-1.7%	0.8%	2.5%	-0.9%	1.3%	2.2%

Distribution TFP Growth Rates									
	1994-1998			1998-2004			1994-2004		
	TFP	Output	Input	TFP	Output	Input	TFP	Output	Input
Industry Wide	1.6%	2.5%	0.9%	0.1%	1.4%	1.3%	0.7%	1.8%	1.1%
Peer Group	2.0%	2.9%	0.9%	0.0%	1.4%	1.4%	0.8%	2.0%	1.2%
Contiguous Area	2.7%	3.4%	0.7%	-0.4%	0.8%	1.2%	0.8%	1.9%	1.0%
KCPL	3.3%	2.6%	-0.6%	0.3%	1.3%	1.0%	1.5%	1.8%	0.3%

Productivity

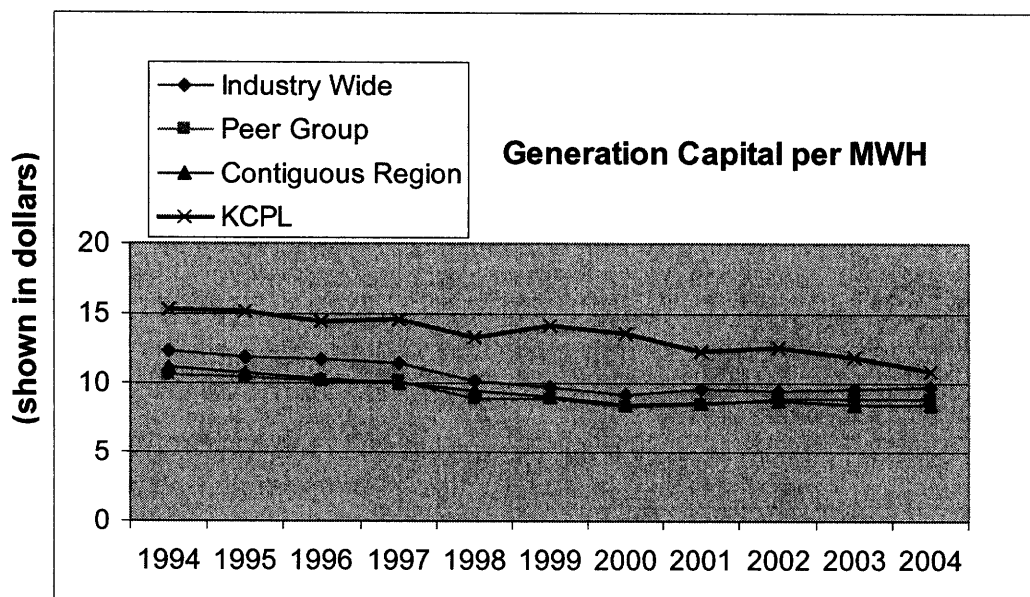
Customer Service TFP Growth Rates									
	1994-1998			1998-2004			1994-2004		
	TFP	Output	Input	TFP	Output	Input	TFP	Output	Input
Industry Wide	2.8%	1.7%	-1.1%	3.2%	1.5%	-1.7%	3.0%	1.6%	-1.5%
Peer Group	4.0%	1.8%	-2.1%	3.0%	1.6%	-1.3%	3.4%	1.7%	-1.6%
Contiguous Area	5.5%	1.4%	-4.1%	2.4%	1.0%	-1.4%	3.6%	1.1%	-2.5%
KCPL	2.1%	1.4%	-0.8%	6.6%	1.6%	-5.0%	4.8%	1.5%	-3.3%

Total Company TFP Growth Rates									
	1994-1998			1998-2004			1994-2004		
	TFP	Output	Input	TFP	Output	Input	TFP	Output	Input
Industry Wide	2.8%	4.5%	1.7%	-0.8%	1.0%	1.8%	0.6%	2.4%	1.8%
Peer Group	2.4%	4.4%	2.1%	-1.6%	0.0%	1.6%	0.0%	1.8%	1.8%
Contiguous Area	2.4%	3.5%	1.2%	0.2%	1.0%	0.9%	1.0%	2.0%	1.0%
KCPL	3.7%	3.1%	-0.7%	1.9%	2.3%	0.4%	2.6%	2.6%	0.0%

Cost Diagnostics

Annual Rate of Change

	1994-1998	1998-2004	1994-2004
Industry Wide	-5.05%	-0.68%	-2.43%
Peer Group	-4.15%	-0.18%	-1.77%
Contiguous Region	-4.31%	-1.82%	-2.82%
KCPL	-3.58%	-3.29%	-3.40%



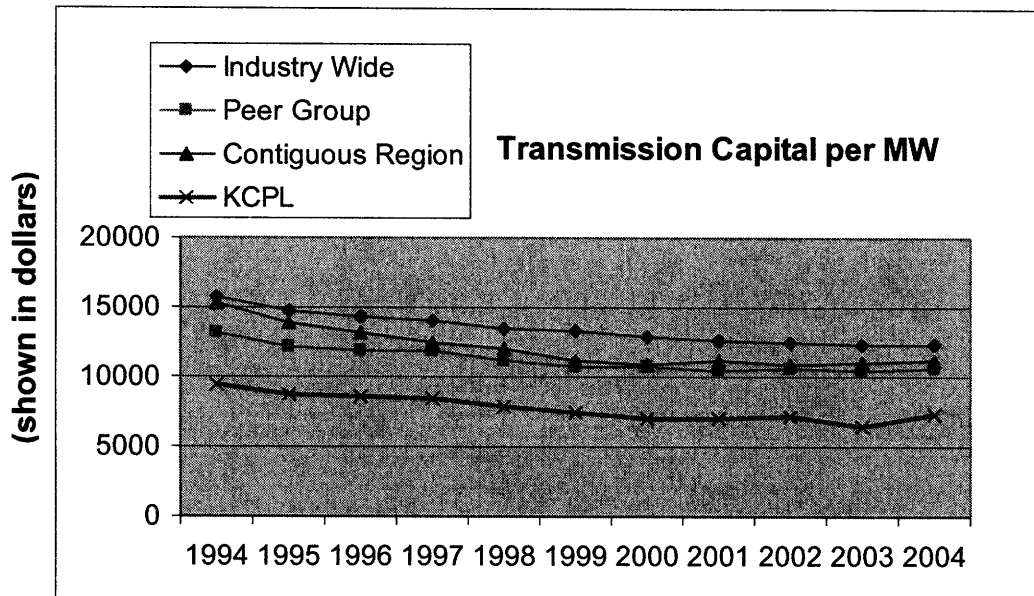
NOTE: The values shown above are the per unit of output-based rental value of capital resources, where the rental values reflect capital valued in 1984 dollars. As discussed in the technical appendix, rental value of capital is developed by employing the Christensen-Jorgensen methodology, which has been widely applied in productivity analysis in the United States and worldwide.

As an example, presume a load factor of 0.60, so that 1 MW of peak load translates into 5256 MWh of energy, annually. A rental value of capital of, say, \$12,000, is equal to \$2.28 per MWh, or 2.3 mills per kWh. With a capital charge rate including returns to capital, income taxes, and property taxes of approximately 14%, the implied value of the stock, which is equal to the per unit price of the stock times the quantity, is equal to \$16 per MWh or about \$85 per kW of demand.

Cost Diagnostics

Annual Rate of Change

	1994-1998	1998-2004	1994-2004
Industry Wide	-3.79%	-1.46%	-2.39%
Peer Group	-4.09%	-0.82%	-2.13%
Contiguous Region	-5.96%	-1.40%	-3.23%
KCPL	-4.45%	-1.22%	-2.51%



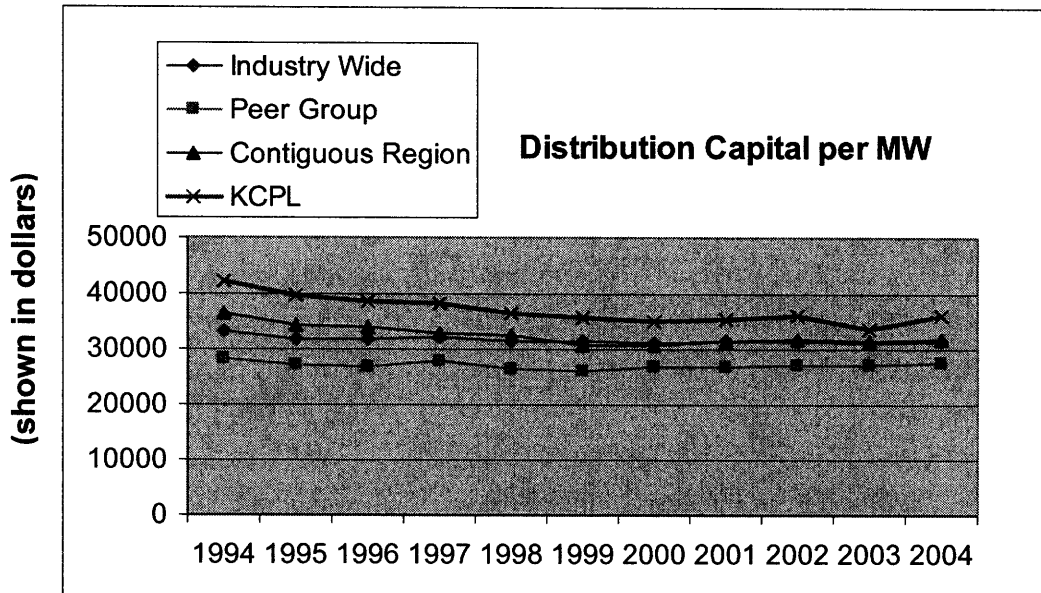
NOTE: The values shown above are the per unit of output-based rental value of capital resources, where the rental values reflect capital valued in 1984 dollars. As discussed in the technical appendix, rental value of capital is developed by employing the Christensen-Jorgensen methodology, which has been widely applied in productivity analysis in the United States and worldwide.

As an example, presume a load factor of 0.60, so that 1 MW of peak load translates into 5256 MWh of energy, annually. A rental value of capital of, say, \$12,000, is equal to \$2.28 per MWh, or 2.3 mills per kWh. With a capital charge rate including returns to capital, income taxes, and property taxes of approximately 14%, the implied value of the stock, which is equal to the per unit price of the stock times the quantity, is equal to \$16 per MWh or about \$85 per kW of demand.

Cost Diagnostics

Annual Rate of Change

	1994-1998	1998-2004	1994-2004
Industry Wide	-1.29%	-0.04%	-0.54%
Peer Group	-1.53%	0.45%	-0.34%
Contiguous Region	-3.07%	-0.34%	-1.44%
KCPL	-3.70%	-0.23%	-1.61%



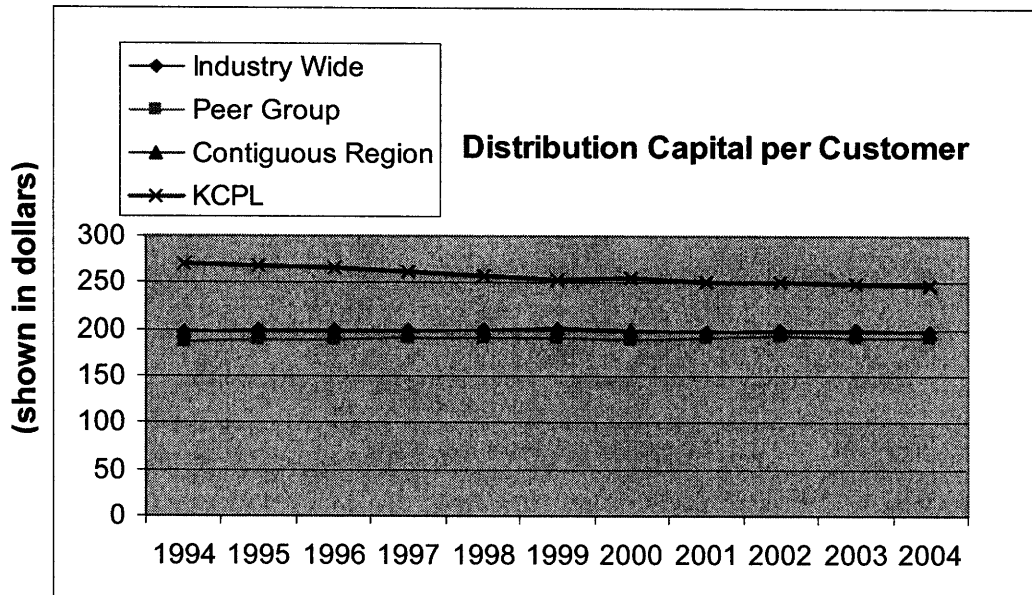
NOTE: The values shown above are the per unit of output-based rental value of capital resources, where the rental values reflect capital valued in 1984 dollars. As discussed in the technical appendix, rental value of capital is developed by employing the Christensen-Jorgensen methodology, which has been widely applied in productivity analysis in the United States and worldwide.

As an example, presume a load factor of 0.60, so that 1 MW of peak load translates into 5256 MWh of energy, annually. A rental value of capital of, say, \$12,000, is equal to \$2.28 per MWh, or 2.3 mills per kWh. With a capital charge rate including returns to capital, income taxes, and property taxes of approximately 14%, the implied value of the stock, which is equal to the per unit price of the stock times the quantity, is equal to \$16 per MWh or about \$85 per kW of demand.

Cost Diagnostics

Annual Rate of Change

	1994-1998	1998-2004	1994-2004
Industry Wide	0.16%	-0.12%	-0.01%
Peer Group	0.60%	-0.06%	0.20%
Contiguous Region	0.32%	-0.12%	0.06%
KCPL	-1.13%	-0.75%	-0.90%



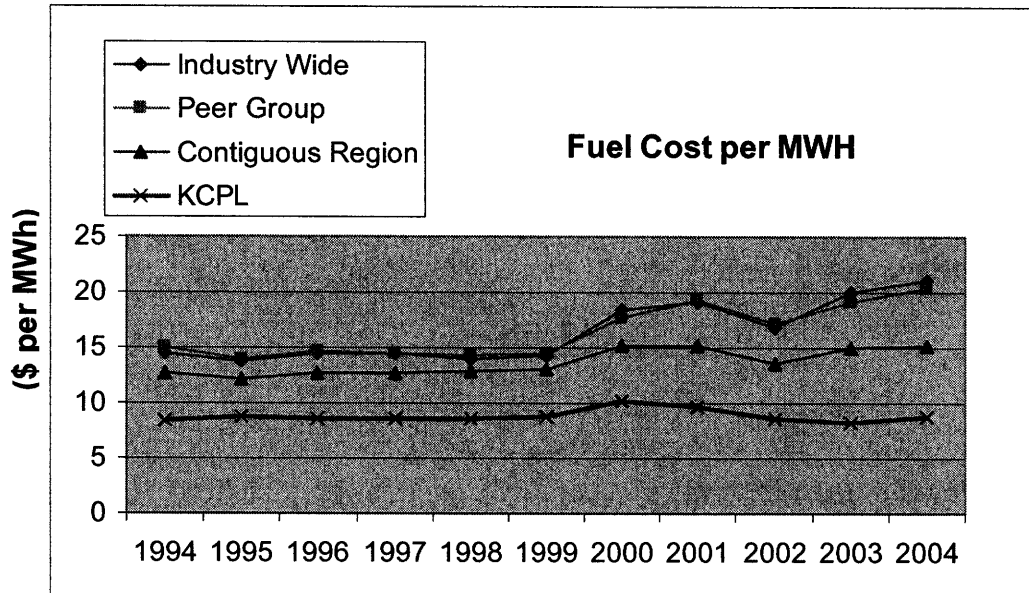
NOTE: The values shown above are the per unit of output-based rental value of capital resources, where the rental values reflect capital valued in 1984 dollars. As discussed in the technical appendix, rental value of capital is developed by employing the Christensen-Jorgensen methodology, which has been widely applied in productivity analysis in the United States and worldwide.

As an example, presume a load factor of 0.60, so that 1 MW of peak load translates into 5256 MWh of energy, annually. A rental value of capital of, say, \$12,000, is equal to \$2.28 per MWh, or 2.3 mills per kWh. With a capital charge rate including returns to capital, income taxes, and property taxes of approximately 14%, the implied value of the stock, which is equal to the per unit price of the stock times the quantity, is equal to \$16 per MWh or about \$85 per kW of demand.

Cost Diagnostics

Annual Rate of Change

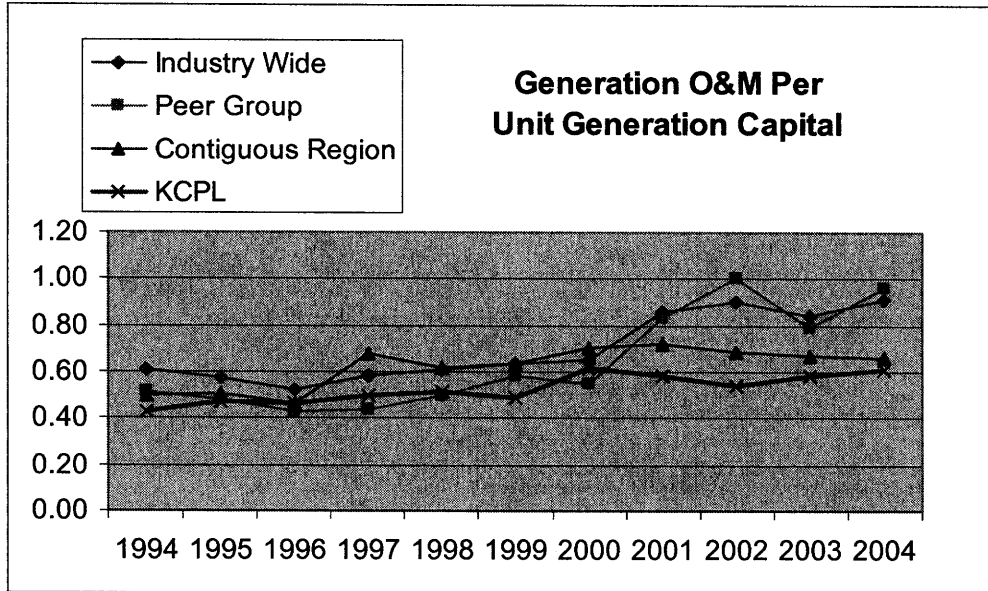
	1994-1998	1998-2004	1994-2004
Industry Wide	-0.77%	6.82%	3.79%
Peer Group	-1.41%	5.93%	2.99%
Contiguous Region	0.62%	2.77%	1.91%
KCPL	0.73%	0.19%	0.40%



Cost Diagnostics

Annual Rate of Change

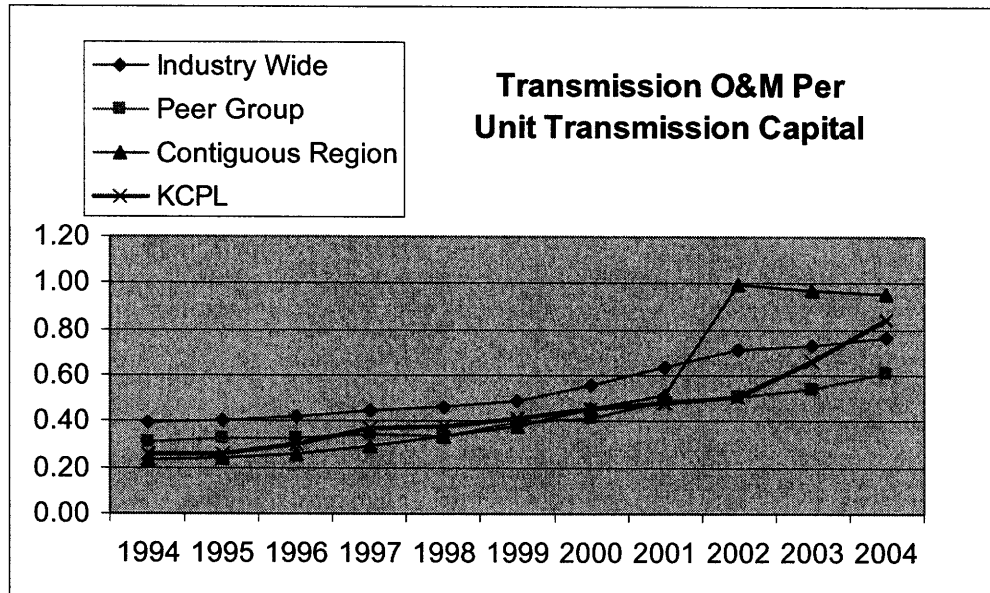
	1994-1998	1998-2004	1994-2004
Industry Wide	-0.03%	6.80%	4.07%
Peer Group	-1.04%	11.12%	6.26%
Contiguous Region	5.40%	1.27%	2.92%
KCPL	4.57%	2.78%	3.50%



Cost Diagnostics

Annual Rate of Change

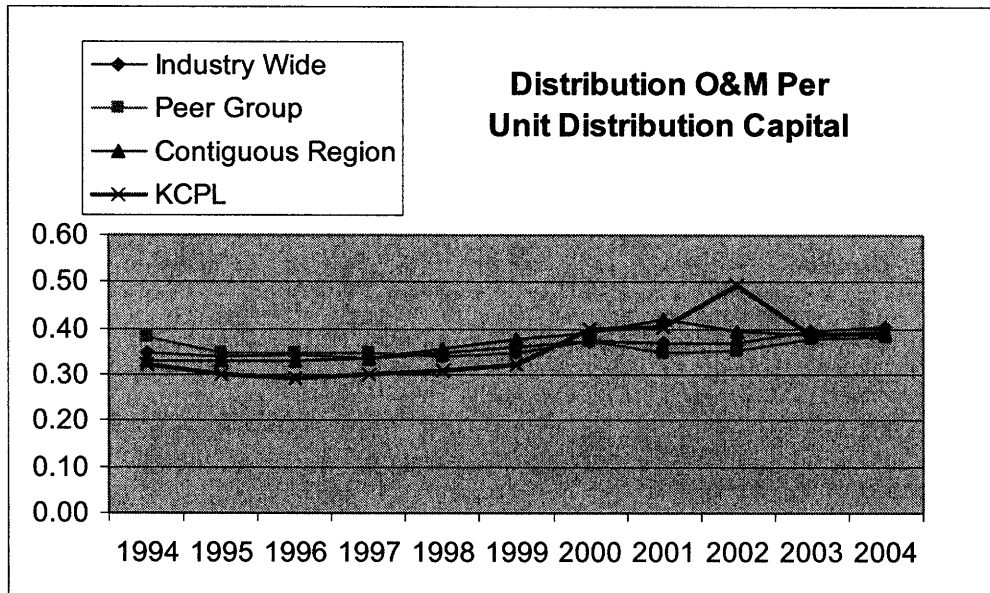
	1994-1998	1998-2004	1994-2004
Industry Wide	4.48%	8.20%	6.71%
Peer Group	1.67%	9.88%	6.60%
Contiguous Region	9.28%	17.46%	14.18%
KCPL	10.16%	13.14%	11.95%



Cost Diagnostics

Annual Rate of Change

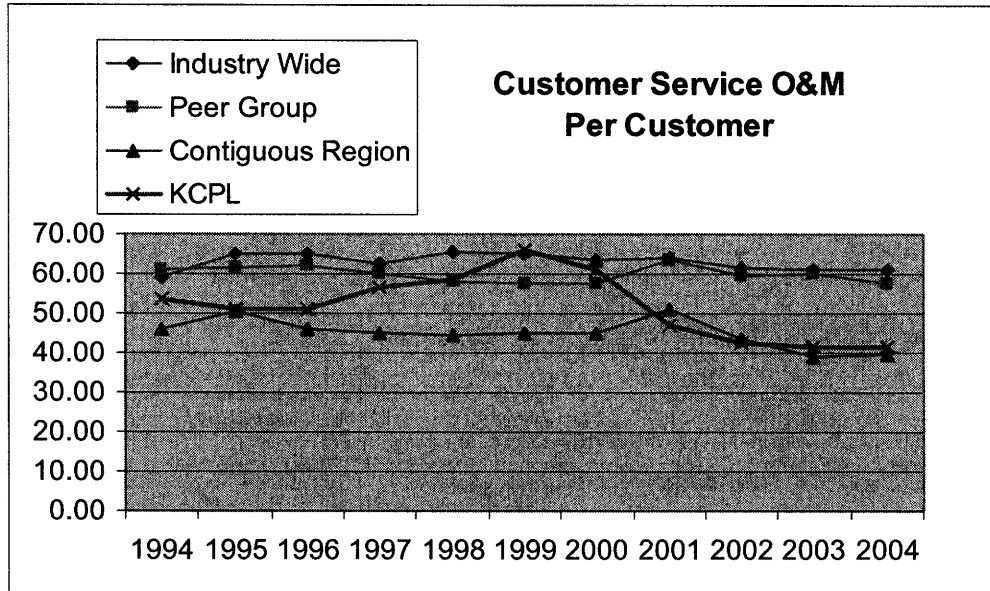
	1994-1998	1998-2004	1994-2004
Industry Wide	-0.02%	2.44%	1.46%
Peer Group	-2.90%	1.92%	-0.01%
Contiguous Region	2.06%	1.51%	1.73%
KCPL	-1.03%	3.87%	1.91%



Cost Diagnostics

Annual Rate of Change

	1994-1998	1998-2004	1994-2004
Industry Wide	2.59%	-1.21%	0.31%
Peer Group	-1.30%	-0.04%	-0.54%
Contiguous Region	-0.85%	-1.84%	-1.45%
KCPL	2.33%	-5.83%	-2.57%



Selected Metrics of Kansas City Power and Light's Balanced Scorecard

	<u>2004</u>	<u>2005</u>
Customer Satisfaction Index	97	97 – 101
SAIDI Index of Reliability	68.9	56.4
% Customers Returned to Service In 2 Hours	72%	79%
Customer Service and Call Speed of Response (% within 30 sec)	75%	77%