

PUBLIC VERSION
*Certain Schedules Attached to this Testimony
Contain "Confidential" or "Confidential-Restricted"
Information and Have Been Removed.*

**BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS**

DIRECT TESTIMONY OF

BURTON L. CRAWFORD

**ON BEHALF OF
KANSAS CITY POWER & LIGHT COMPANY**

**IN THE MATTER OF THE PETITION OF
KANSAS CITY POWER & LIGHT COMPANY ("KCP&L")
FOR DETERMINATION OF THE RATEMAKING PRINCIPLES
AND TREATMENT THAT WILL APPLY TO THE RECOVERY
IN RATES OF THE COST TO BE INCURRED BY KCP&L FOR
CERTAIN ELECTRIC GENERATION FACILITIES
UNDER K.S.A. 66-1239**

DOCKET NO. 11-KCPE581 -PRE

1 **Q:** Please state your name and business address.

2 **A:** My name is Burton L. Crawford. My business address is 1200 Main Street, Kansas City,
3 Missouri 64105.

4 **Q:** By whom and in what capacity are you employed?

5 **A:** I am employed by Kansas City Power & Light Company ("KCP&L" or the "Company")
6 as Senior Manager, Energy Resource Management.

1 **Q: What are your responsibilities?**

2 A: I am responsible for managing the Energy Resource Management (“ERM”) department.
3 Activities of ERM include resource planning, wholesale energy purchase and sales
4 evaluations, energy portfolio management, and capital project evaluations.

5 **Q: Please describe your education, experience and employment history.**

6 A: I hold a Master of Business Administration from Rockhurst College and a Bachelor of
7 Science in Mechanical Engineering from the University of Missouri. Within KCP&L, I
8 have served in various areas including regulatory, economic research, and power
9 engineering since 1988.

10 **Q: Have you previously testified in a proceeding before the Kansas Corporation**
11 **Commission (“KCC” or “Commission”) or before any other utility regulatory**
12 **agency?**

13 A: Yes, I have. I provided testimony to the Missouri Public Service Commission (“MPSC”)
14 in Case No. EO-2006-0142, which pertains to KCP&L’s application to join the
15 Southwest Power Pool Regional Transmission Organization. I also provided testimony
16 before the MPSC in Case Nos. ER-2006-0314, ER-2007-0291, ER-2009-0090, ER-2009-
17 0089, ER-2010-355 and ER-2010-356.

18 **Q: What is the purpose of your testimony?**

19 A: This testimony supports the process for obtaining predetermination for La Cygne
20 environmental retrofit investments. It includes a description of KCP&L’s long-term
21 generation planning process, a description of the alternative resource plans that were
22 considered to meet KCP&L’s load requirements, and a discussion of the analysis of those
23 alternatives. It also discusses responses to several of the questions posed by the

1 Commission in its January 27, 2011 Order (the “492 Order”) in Docket No. 11-GIME-
2 492-GIE (the “492 Docket”) including:

3 From paragraph 8 of the 492 Order:

4 (c) What are KCP&L’s expected capacity and/or energy needs over
5 the appropriate investment planning horizons (e.g., 10, 15, 25 years)
6 given the Company’s existing generation portfolios?

7 (d) If capacity and/or energy is not needed, then how should non-
8 compliant plants be treated?

9 (e) If capacity and/or energy is needed, should KCP&L retrofit
10 existing non-compliant plants or build new plants?

11 (f) What criteria should be employed to determine optimal retrofit
12 configurations to meet regulatory requirements? Has this analysis been
13 performed for individual plants? Which plants?

14 (g) Do the environmental retrofit projects that are currently installed,
15 under construction or planned represent the end of the upgrading process
16 for their corresponding generating units, or will the environmental retrofit
17 projects, in turn, require additional improvements to these units? (I
18 respond to this question from the perspective of how this fits into the
19 modeling process only. Company witness, Mr. Scott Heidtbrink,
20 addresses this question, also.)

21 (h) For any planned but incomplete environmental upgrades, has
22 analysis been performed on how the planned upgrades may impact the
23 expected life of the plant at the completion of the upgrades? If so, what
24 criteria for analysis was used? (I respond to this question from the
25 perspective of how this fits into the modeling process only. See Mr.
26 Heidtbrink’s Direct Testimony for this question, also.)

27 (i) If replacement of a plant is considered as an option, what criteria
28 should be used to determine the size and type of the generation plant to be
29 built?

30 (j) What factors were considered in any hypothetical resource
31 portfolio scenarios which have been run?

32 (k) How does KCP&L plan to regulate the wind and other renewable
33 generation that is required by the Renewable Energy Standards Act
34 (K.S.A. 66-1256 through 66-1262)? If KCP&L plans to add generation to
35 regulate wind and other renewable generation, how much generation and
36 what fuel sources are planned to be used at these new plants used for
37 regulation?

1 From paragraph 15 of the 492 Order:

- 2 (a) If a utility has selected a specific option (i.e., mothball, retrofit,
3 decommission, and/or build new plant), why were other options
4 rejected, not just why the option chosen was appropriate?

5 **I. KCP&L'S LONG-TERM GENERATION PLANNING PROCESS AND**
6 **ANALYSIS OF ALTERNATIVES CONSIDERED.**

7 **Q: Why are these retrofits needed?**

8 A: The retrofits are needed to meet the Best Available Retrofit Technology (“BART”)
9 Section of the State of Kansas Air Quality State Implementation Plan - Regional Haze as
10 discussed in the Direct Testimony of KCP&L witness Paul Ling. Furthermore, the
11 Company will likely be required to meet Transport Rule emissions requirements that are
12 expected to be finalized later this year. The final Transport Rule may or may not result in
13 the need to retrofit LaCygne. Details concerning the requirements of these environmental
14 rules are provided in Mr. Ling’s testimony.

15 **Q: Please describe the planning process.**

16 A: The process used in evaluating long-term resource plan alternatives is based on the
17 electric integrated resource plan (“ERP”) procedures required by Missouri Rule CSR 240
18 Chapter 22. Copies of past Missouri ERP filings have been shared with the Kansas
19 Corporation Commission Staff (“Staff”). Although the process is based on the
20 requirements of Missouri ERP rules, conceptually the process represents a standard
21 approach within the electric utility industry.

22 In the initial step, the Company reviews and screens a number of preliminary
23 options for environmental compliance, system generation and demand side
24 management/energy efficiency programs (“DSM/EE”). This step reduces the number of
25 options to include in the evaluation of alternative resource plans. From these resource

1 options, alternative resource plans are assembled. Each alternative resource plan is
2 developed to meet the Company's reserve obligations and requirements of state(s)
3 renewable portfolio standards.

4 The plans developed in the previous step are then evaluated in a production cost
5 model called MIDAS™ in order to calculate each plan's expected total revenue
6 requirement over a number of years. These calculations are performed for each
7 alternative resource plan under a variety of potential market futures (*i.e.*, scenarios) to
8 determine the level of risk each alternative plan faces. These risks are defined by varying
9 levels of critical uncertain factors such as natural gas prices, retail customer load growth,
10 carbon dioxide ("CO₂") costs, etc. Sixty-four (64) scenarios were devised to gauge the
11 risk associated with identified critical uncertain factors. A list of these scenarios is
12 included in Confidential Schedule BLC2011-10.

13 The end result of this process is a series of alternative long-term resource plans,
14 each with an expected 25-year net present value of revenue requirement ("NPVRR") that
15 takes into account the risk associated with critical uncertain factors in the industry.

16 **Q: Please detail the resource option screening process.**

17 A: The resource screening process reduces the number of supply options to a manageable
18 number. Each alternative is compared on an average cost of total operation. A limited
19 number of alternatives are then passed forward for further consideration in the analysis.
20 Options that are more expensive to operate are barred from further consideration. This
21 greatly improves the speed of the analyses that follow.

1 **Q: Please describe the DSM/EE screening process.**

2 A: The Company retains the service of several consultants to identify DSM/EE end-use
3 measure potential. These measures are subjected to a benefit/cost screening analysis.
4 Once screened, the load impact and costs of the remaining programs are treated as a
5 single DSM/EE program in the analysis.

6 **Q: Describe the MIDAS™ model.**

7 A: MIDAS™ is a product of ABB-Ventyx and has been an industry standard production and
8 financial cost model for over 20 years. The modeler inputs a resource expansion plan
9 that can include different assumptions of environmental retrofits, plant retirements or
10 system generation expansion. This expansion plan is added to the Company's existing
11 portfolio of assets. Operation of the resulting asset portfolio is then simulated for
12 20+ years on an hourly basis to calculate the portfolio's production cost under given
13 economic and market price assumptions. This production cost model is repeated for a
14 large number of future scenarios of critical uncertain factors. The model outputs an
15 annual revenue requirement using the results of the production cost model and the
16 financial position of the Company to develop a complete view of Company costs. This
17 annual revenue requirement is discounted to calculate the plan's NPVRR.

18 **Q: How is the MIDAS™ model used in this analysis?**

19 A: The MIDAS™ model takes each alternative expansion plan and calculates its financial
20 performance under a large number of future scenarios. This set of future scenarios is
21 referred to as the "Risk Tree" in MIDAS™. Each branch of the Risk Tree represents a
22 different future scenario. Each scenario is made up of varying combination of uncertain
23 market forecasts described below. The Risk Tree used in this analysis contains

1 64 different scenarios or branches. This Risk Tree is graphically represented in
2 Confidential Schedule BLC2011-10.

3 Each expansion plan that is run through MIDAS™ has 64 separate NPVRR
4 results. These separate results are probability weighted over the 64 scenarios to calculate
5 an expected value of NPVRR for each expansion plan. The plan that has the lowest
6 expected NPVRR therefore shows the greatest potential of cost effectiveness over a wide
7 range of future risks. Furthermore, the results can be evaluated scenario-by-scenario to
8 determine if there exist any future risks that will cause another plan to perform better than
9 the plan with the lowest expected NPVRR.

10 **Q: What sort of information is collected and used in the planning process?**

11 A: The Company uses a wide range of information to conduct this analysis. Data is
12 collected on potential resource options including supply resources (coal, natural gas,
13 nuclear, renewable, etc.) and DSM/EE measures. Along with these options, the
14 Company collects information for environmental retrofit costs.

15 Additionally, the Company develops forecasts of critical uncertainties. These
16 include, but are not limited to natural gas prices, CO₂ emission allowance prices, load
17 growth rates, interest rates and costs to acquire capital, coal prices, construction costs,
18 etc. These forecasts include a mid, high and low case for each critical driver.

19 Other information used in the analysis relate to current issues and events that may
20 drive resource acquisition decisions such as the impact of state-based renewable
21 standards or federal mandates.

22 Lastly, the Company uses its existing financial structure as a starting point for all
23 trends of financial measures such as interest coverage ratio and debt to total capital ratio.

1 **Q: With regard to uncertainties, what are your major assumptions and their sources?**

2 A: Major assumptions sourced from the KCP&L ERM Department include:

3 ▪ All uncontrolled coal plants will be environmentally retrofitted
4 (scrubbers, SCR, bag house) or retired/mothballed by 2016.

5 ▪ State renewable portfolio standards (“RPS”) for Missouri and Kansas
6 will be met with constructed generation. The Company does not
7 assume that it will rely on purchased RECs for long-term compliance.

8 Major assumptions sourced from the KCP&L Fuels Department:

9 ▪ Natural Gas Prices. See attached Confidential-Restricted Schedule BLC2011-
10 1.

11 ▪ CO₂ Allowance Prices. See attached Confidential-Restricted Schedule
12 BLC2011-2.

13 Support for these assumptions can be found in the Direct Testimony of Company Witness
14 Mr. Wm. Edward Blunk.

15 Major assumptions sourced from the KCP&L Load Forecasting Department:

16 ▪ Annual Retail Load Growth – Energy. See attached Confidential Schedule
17 BLC2011-3.

18 ▪ Annual Retail Load Growth – Peak Demand. See attached Confidential
19 Schedule BLC2011-4.

20 Please note that a complete discussion of the method of developing this load forecast is
21 included in the Direct Testimony of Company witness Mr. George McCollister.

22 Major assumptions sourced from the KCP&L Energy Solutions Department:

23 ▪ DSM/EE Resources. See attached Confidential Schedule BLC2011-5 and
24 BLC2011-6.

25 Major assumptions sourced from the KCP&L Corporate Finance Department:

- 1 ▪ Financial Returns and Interest Rates. See attached Confidential-Restricted
2 Schedule BLC2011-7.

3 **Q: What alternative plans were analyzed?**

4 A: The analysis considered fourteen (14) different resource plans with four (4) additional
5 sensitivity plans. These plans are described in detail in attached Confidential-Restricted
6 Schedule BLC2011-13.

7 **II. QUESTIONS FROM COMMISSION DOCKET NO. 11-GIME-492-GIE**

8 **Q: The KCC recently issued an Order opening a new docket, the 492 Docket, which is**
9 **designed to address issues regarding evaluation of retrofit decisions. Would the**
10 **analysis performed by KCP&L regarding the La Cygne environmental retrofits**
11 **answer the questions raised in the 492 Docket?**

12 A: It addresses most of these issues on behalf of KCP&L. In paragraph 8 of the 492 Order,
13 information was requested regarding a) applicable regulatory programs, b) emissions
14 allowances, c) capacity and energy needs over the investment horizon, d) treatment of
15 non-needed capacity assets, e) possible capacity expansion, f) optimal retrofit analysis
16 criteria, g) continuing required retrofits, h) expected life impact from proposed
17 environmental retrofits, i) size and type of replacement power capacity, j) factors
18 considered in portfolio scenarios, and k) plans to regulate additional wind generation. In
19 the analysis conducted for this filing, most of the listed information requirements have
20 been addressed in some form. I will discuss issues c through k set forth in paragraph 8 of
21 the 492 Order. I will also address the first issue set forth in paragraph 15 of the
22 492 Order. As to each item I discuss, I will note whether it is contained in the resource
23 plan analysis or elsewhere in the testimony and exhibits in this docket.

1 **Q: What are KCP&L's expected capacity and/or energy needs over the appropriate**
2 **investment horizons given the Company's existing generation portfolio? (Item c in**
3 **paragraph 8 of the 492 Order.)**

4 A: Capacity and Load Balance for KCP&L both with and without the La Cygne units are
5 shown in Confidential-Restricted Schedule BLC2011-11.

6 **Q: If capacity and/or energy are not needed, then how should non-compliant plants be**
7 **treated? (Item d in paragraph 8 of the 492 Order.)**

8 A: As shown in Confidential-Restricted Schedule BLC2011-12, the capacity of La Cygne
9 Units 1 and 2 is needed therefore this question does not apply in this case.

10 **Q: If capacity and/or energy are needed, should KCP&L retrofit existing non-**
11 **compliant plants or build new plants? (Item e in paragraph 8 of the 492 Order.)**

12 A: A generic, one-size-fits-all-situations answer to this question does not exist. Each
13 decision should be based upon appropriate analysis of the alternatives. In the case of
14 La Cygne Units 1 and 2, KCP&L has shown that the capacity and energy from these units
15 is needed. Based on the Company's resource plan analysis and the NPVRR results
16 shown in Confidential-Restricted Schedule BLC2011-12, retrofit of the existing
17 La Cygne Units 1 and 2 is the least cost option to continue to supply the capacity and
18 energy needs of our customers.

19 **Q: What criteria should be employed to determine optimal retrofit configurations to**
20 **meet regulatory requirements? Has this analysis been performed for individual**
21 **KCP&L plants? Which plants? (Item f in paragraph 8 of the 492 Order.)**

22 A: In general, the criteria to be employed are the minimization of NPVRR. Once the retrofit
23 has been completed for La Cygne Units 1 and 2, the only KCP&L plants that generally

1 do not meet best available retrofit technology are the three Montrose units. Based on
2 current assumptions and analysis, it is least cost to continue to run these plants absent
3 environmental retrofits until required to do otherwise. Although NPVRR is the primary
4 basis for evaluation of resource alternatives, other factors are relevant to the decision
5 making process. For instance, it is important to maintain a balanced portfolio of
6 generation resources. KCP&L anticipates, of the two existing generation sites that have
7 not yet been retrofitted to BART – namely Montrose Station and La Cygne Station,
8 Montrose would be the first existing generation site to retire rather than be retrofit. Given
9 this, it is important to retain operation of the La Cygne site to maintain a balanced
10 portfolio of coal, gas, nuclear, and renewable generation. The least cost alternative to
11 retrofitting existing units to meet BART is combined cycle gas generation (“CC”).
12 Retiring La Cygne generating station and replacing it with CC generation, followed by
13 retirement of Montrose station generation with CC replacement would result in a
14 significant reliance on the relatively more volatile natural gas market. NPVRR is based
15 on the long-term economics of resource alternatives. It does not reflect shorter-term
16 variations in fuel cost that can impact customers immediately. For instance, even if the
17 NPVRR was lowest for CC, which it is not in the case of La Cygne, one still needs to
18 consider that customers would be exposed in the shorter-term to larger variability in their
19 bills attributable to the volatile gas market. Many customers already use natural gas for
20 some portion of their space/water heating and cooking. With a generation portfolio more
21 dependent on gas, the currently less volatile electric bill will become more volatile in line
22 with gas price variability. This would result in increased customer dissatisfaction. (See
23 Mr. Blunk’s testimony for further discussion of natural gas market volatility.)

1 **Q: Do the environmental retrofit projects that are currently installed, under**
2 **construction or planned represent the end of the upgrading process for their**
3 **corresponding KCP&L generating units, or will the environmental retrofit projects,**
4 **in turn, require additional improvements to these KCP&L units? (Item g in**
5 **paragraph 8 of the 492 Order.)**

6 A: From an analysis perspective, KCP&L takes into account potential regulation changes to
7 the extent that they are in place or proposed. To the extent they are probable, KCP&L
8 models them. For example, KCP&L expects that cooling towers will need to be added to
9 its coal plants. These costs have been included in this analysis. (See also the Direct
10 Testimony of Company witness Mr. Scott Heidtbrink regarding this question.)

11 **Q: For any planned but incomplete environmental upgrades, has analysis been**
12 **performed on how the planned upgrades may impact the expected life of the plant at**
13 **the completion of the upgrades? If so what criteria for analysis were used? (Item h**
14 **in paragraph 8 of the 492 Order.)**

15 A: The equipment to be installed at La Cygne Units 1 and 2 will not impact the useful life of
16 the units. KCP&L has modeled continuation of La Cygne Units 1 and 2 throughout the
17 planning period by incorporating normal maintenance activities and overlaid the cost of a
18 long-range asset management plan. (Mr. Heidtbrink provides more detail on this
19 question in his testimony.)

1 **Q: If replacement of a KCP&L plant is considered as an option, what criteria should be**
2 **used to determine the size and type of the generation plant to be built? (Item i in**
3 **paragraph 8 of the 492 Order.)**

4 A: The primary criteria employed are the same as that used to analyze the retrofits; that is,
5 minimization of NPVRR. However, in some cases it may be prudent to select a resource
6 plan that has a higher NPVRR if in doing so the risk associated with changes in critical
7 uncertainties, environmental regulations, or other factors is mitigated.

8 **Q: What factors were considered in any hypothetical resource portfolio scenarios**
9 **which have been run? (Item j in paragraph 8 of the 492 Order.)**

10 A: The major factors included in the scenarios are described earlier in this testimony.

11 **Q: How does KCP&L plan to regulate the wind and other renewable generation that is**
12 **required by the Renewable Energy Standards Act (K.S.A. 66-1256 through**
13 **66-1262)? (Item k in paragraph 8 of the 492 Order.)**

14 A: Wind resources required by the Renewable Energy Standards Act (K.S.A. 66-1256
15 through 66-1262) will cause additional demands for load regulation and other ancillary
16 services. In the near-term, KCP&L will use its existing resources for regulation. Once
17 the Southwest Power Pool consolidates Balancing Authorities (anticipated in 2014),
18 KCP&L will no longer be required to regulate for its load directly. However, KCP&L
19 will be required to either purchase regulating reserve or supply its share based on
20 whatever SPP rules are ultimately approved. These rules are currently under
21 development.

1 **Q: If a utility has selected a specific option (i.e., mothball, retrofit, decommission,**
2 **and/or build a new plant) why were other options rejected, not just why the option**
3 **chosen was appropriate? (Item (a) in paragraph 15 of the 492 Order.)**

4 A: In this case, KCP&L has chosen to retrofit the La Cygne station with the equipment
5 necessary to meet BART. All other options were rejected because they resulted in higher
6 expected costs for retail customers over the next 20 years. The expected value of
7 NPVRR for each alternative plan is detailed in Confidential-Restricted Schedule
8 BLC2011-12. However, as I previously indicated in response to item f of paragraph 8,
9 there are other reasons to reject replacement of La Cygne generation with new gas-fired
10 generation. As for replacing La Cygne coal-fired generation with new coal-fired
11 generation, the results of the NPVRR analysis places new coal-fired generation behind
12 new gas-fired generation as an alternative to retrofitting La Cygne generation. In
13 addition, new coal has all of the same risk related to future environmental regulations as
14 retrofitting existing generation in addition to the uncertainty surrounding the ability to
15 obtain air and other permits for new coal generation.

16 **Q: What are the results of the analysis the Company prepared for evaluation of the**
17 **La Cygne environmental retrofit decision?**

18 A: The results of the planning process indicate that the La Cygne retrofits are part of the low
19 cost plan in about 73% of the 64 scenarios analyzed. The scenarios where the retrofits
20 were not selected generally include both the low gas price scenarios and the high CO₂
21 price scenarios.

1 **Q: What are your recommendations resulting from the planning process?**

2 A: La Cygne must meet BART requirements by June 1, 2015 or be retired/mothballed. Our
3 recommendation is to move forward with the retrofit of La Cygne Unit 1 and La Cygne
4 Unit 2. This recommendation is supported by the results of the resource planning process
5 conducted for this filing which indicates that the retrofit of La Cygne Unit 1 and
6 La Cygne Unit 2 is currently the appropriate least cost option. The present plan to retrofit
7 La Cygne Unit 1 is consistent with the plan presented as part of the Settlement
8 Agreement in the 04-KCPE-1025-GIE docket (the “1025 docket” and the “1025 S&A”)
9 which the Commission found to be in the public interest at that time.

10 **Q: In the intervening time since the Commission’s approval of the retrofits in the 1025**
11 **Docket, have the circumstances concerning La Cygne Unit 1 changed in a way that**
12 **would make the underlying rationale for finding the project to be in the public**
13 **interest no longer applicable?**

14 A: No, they have not. As demonstrated by this planning analysis, the La Cygne retrofits
15 result in minimizing expected NPVRR.

16 **Q: Do you have any schedules which support your testimony?**

17 A: Yes, I have included the following schedules which support the evaluation as part of my
18 testimony:

- 19 ▪ Confidential-Restricted Schedule BLC2011-1 reflects 20-year assumptions for
20 gas prices.
- 21 ▪ Confidential-Restricted Schedule BLC2011-2 reflects 20-year assumptions for
22 CO₂ emission allowance costs.

- 1 ▪ Confidential Schedule BLC2011-3 reflects the 20-year KCP&L energy
2 forecasts.
- 3 ▪ Confidential Schedule BLC2011-4 reflects the 20-year KCP&L gross peak
4 load forecasts.
- 5 ▪ Confidential Schedule BLC2011-5 reflects 20-year assumptions for annual
6 demand side management (“DSM”) megawatts (“MWs”) for the base
7 scenarios.
- 8 ▪ Confidential Schedule BLC2011-6 reflects 20-year assumptions for annual
9 DSM MWs for the sensitivity scenarios.
- 10 ▪ Confidential Schedule BLC2011-7 reflects financial assumptions for debt
11 ratio, debt rate and return on equity for various levels of future uncertainty.
- 12 ▪ Confidential Schedule BLC2011-8 reflects utility nominal cost rankings for
13 54 different technologies.
- 14 ▪ Common Schedule BLC2011-9 reflects details of the Company’s existing
15 generation resources.
- 16 ▪ Confidential Schedule BLC2011-10 details the 64 scenarios of the analysis
17 Risk Tree.
- 18 ▪ Confidential-Restricted Schedule BLC2001-11 details the capacity and load
19 balance of KCPL with its existing fleet and under the assumption that the
20 La Cygne station is removed from KCP&L’s generation mix.
- 21 ▪ Confidential-Restricted Schedule BLC2011-12 details the results of the
22 analysis and list the expected NPVRR of each alternative.

1 ▪ Confidential-Restricted Schedule BLC2011-13 details the fourteen alternative
2 expansion plans and the four sensitivity plans used in the analysis.

3 **Q: Do you submit this information to address the requirements of K.S.A. 66-1239 (c)?**

4 **A:** Yes, my testimony addresses the items listed in K.S.A. 66-1239 (c)(2)(C) and (D).

5 **Q: Does that conclude your testimony?**

6 **A:** Yes, it does.

BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS

In the Matter of the Petition of Kansas)
City Power & Light Company ("KCP&L"))
for Determination of the Ratemaking)
Principles and Treatment that Will Apply)
to the Recovery in Rates of the Cost to be)
Incurred by KCP&L for Certain Electric)
Generation Facilities Under K.S.A. 2003)
SUPP. 66-1239)

Docket No. 11-KCPE-____-PRE

AFFIDAVIT OF BURTON L. CRAWFORD

STATE OF MISSOURI)
) ss
COUNTY OF JACKSON)

Burton L. Crawford, being first duly sworn on his oath, states:

1. My name is Burton L. Crawford. I work in Kansas City, Missouri, and I am employed by Kansas City Power & Light Company as Senior Manager, Energy Resource Management.

2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of Kansas City Power & Light Company consisting of seventeen (17) pages, having been prepared in written form for introduction into evidence in the above-captioned docket.

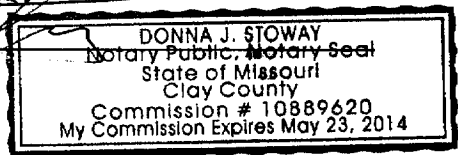
3. I have knowledge of the matters set forth therein. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded, including any attachments thereof, are true and accurate to the best of my knowledge, information and belief.

[Signature]
Burton L. Crawford

Subscribed and sworn before me this 1st day of February 2011.

[Signature]
Notary Public

My commission expires: May 23, 2014



**SCHEDULES BLC2011-1
THROUGH BLC2011-8
THESE DOCUMENTS CONTAIN
CONFIDENTIAL OR CONFIDENTIAL-
RESTRICTED INFORMATION NOT
AVAILABLE TO THE PUBLIC
ORIGINAL FILED UNDER SEAL**

Location	OEM	Rating	Fuel	Environmental Equipment	Commissioned
Hawthorn 5	GE/B&W	565 MW	Coal	SCR, Scrubber, Baghouse, LNB, OFA	1969 (2001)
Iatan 1: 70%KCPL/18%GMO/12%EDE	GE/B&W	706 MW	Coal	SCR, Scrubber, Baghouse, LNB, OFA, Mercury	1980
Iatan 2: 54.71%KCPL/18%GMO/11.76%MJM UEC3.53%KEPCO	Toshiba/Alstom	850 MW	Coal	SCR, Scrubber, Baghouse, LNB, OFA	2010
LaCygne 1: 50%KCPL/50%Westar	Westinghouse/B&W	736 MW	Coal	SCR, Scrubber, OFA	1973
LaCygne 2: 50%KCPL/50%Westar	GE/B&W	682 MW	Coal	Precipitator	1977
Montrose 1	GE/CE	170 MW	Coal	Precipitator,	1958
Montrose 2	GE/CE	164 MW	Coal	Precipitator	1960
Montrose 3	Westinghouse/CE	176 MW	Coal	Precipitator	1963
Hawthorn 6/9 CC	Siemens V84.3A1 - W	136 MW / 130 MW	Gas		1997/2000
Hawthorn 7 & 8	GE Frame 7EA	75 MW each	Gas		1999
Osawatomie	GE Frame 7EA	76 MW	Gas		2002
Northeast	GE Frame 7B (8)	45 MW (2) / 53 MW (6)	Oil		1972 - 1977
West Gardner	GE Frame 7EA (4)	77 MW each	Gas		2002
Wolf Creek: 47%KCPL/47%Westar/6% KEPCO	Westinghouse	1200 MW	Nuclear		2003
Spearville 1	GE Wind Turbines	100.5 MW	Wind		2006
Spearville 2	GE Wind Turbines	48 MW	Wind		2010

**SCHEDULES BLC2011-10
THROUGH BLC2011-13
THESE DOCUMENTS CONTAIN
CONFIDENTIAL OR CONFIDENTIAL-
RESTRICTED INFORMATION NOT
AVAILABLE TO THE PUBLIC
ORIGINAL FILED UNDER SEAL**