

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

DIRECT TESTIMONY OF

SCOTT H. HEIDTBRINK

**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-KCPE-581-PRE

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

2 **A:** My name is Scott H. Heidtbrink. 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 Vice President – Supply.

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

8 **A:** I am responsible for all aspects of KCP&L’s supply division including KCP&L Greater
9 Missouri Operations Company (“GMO”). This includes all of KCP&L’s and GMO’s

1 energy generation resources, generation dispatch, off-system sales, coal procurement, and
2 asset management for the jointly owned generation facilities.

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

4 A: I received a Bachelor of Science degree in electrical engineering from Kansas State
5 University in 1986. I previously served as Vice President, Power Generation and Energy
6 Resources of Aquila's regulated gas and electric operations. I was responsible for
7 Aquila's power generation plants in Missouri and Colorado and for the company's energy
8 resources, including integrated resource planning, generation dispatch, off-system sales,
9 coal procurement, and asset management for the company's minority ownership positions
10 in other coal-fired plants.

11 I joined Aquila in 1987 as a field engineer at the company's Lee's Summit,
12 Missouri service center and held gas and electric utility operations engineering and field
13 and customer operations management positions, including state president and general
14 manager – Kansas, from 1994 to 1997; vice president, network management /
15 engineering, 1998 to 2000; vice president, Aquila Gas Operations, 2001; and Vice
16 President, Kansas/Colorado Gas, 2002 to 2004. I also led the deployment of Six Sigma
17 into Aquila's utility operations. I joined KCP&L in 2008 as part of the KCP&L
18 acquisition of Aquila.

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

21 A: No, I have not testified before the KCC; however, I have testified before the Missouri
22 Public Service Commission.

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

2 A: At the La Cygne Generating Station, the Company is preparing to install wet scrubbers,
3 baghouses and a common dual-flue chimney for both La Cygne Units 1 and 2, and a
4 selective catalytic reduction (“SCR”) system, low-nitrogen oxide (“NOx”) burners
5 (“LNBS”) and an overfire (“OFA”) system for Unit 2. The purpose of this testimony is
6 to: (1) provide background on the generating units at the La Cygne Station; (2) give an
7 overview of the environmental upgrade project and what has transpired on the project to
8 date; (3) provide a brief overview of the alternatives considered, which are discussed in
9 more detail in the Direct Testimony of KCP&L witness Burton Crawford, and the
10 timeline for completion; and (4) address several of the questions posed by the
11 Commission in Docket No. 11-GIME-492-GIE (the “492 Docket”) including:

12 (g) Do the environmental retrofit projects that are currently installed,
13 under construction, or planned for the La Cygne Station represent the end
14 of the upgrading process for their corresponding generation units, or will
15 the environmental retrofit projects, in turn, require additional
16 improvements to the La Cygne units? and

17 (h) For any planned but incomplete environmental upgrades for the
18 La Cygne Units 1 and 2, has analysis been performed on how the planned
19 upgrades may impact the expected life of the plant at the completion of the
20 upgrades? If so, what criteria were used for analysis?

1 **I. BACKGROUND ON LA CYGNE GENERATING UNITS**

2 **Q: Is KCP&L the sole owner of the La Cygne Generating Station?**

3 A: No. KCP&L owns 50 percent of each of the two units and the common facilities at the
4 La Cygne Station. Westar Energy, Inc. (“Westar”), through its Kansas Gas & Electric
5 Company (“KG&E”) subsidiary, owns 50 percent of La Cygne Unit 1 and the common
6 facilities and, as I understand it, leases its 50 percent share of La Cygne Unit 2 through a
7 sale/leaseback arrangement put in place many years ago. KCP&L is the operator of both
8 units.

9 **Q: When were the two units first placed in service?**

10 A: La Cygne Unit 1 is a once through supercritical cyclone coal-fired boiler rated at
11 812 MW gross / 736 MW net. It was constructed in the early 1970s and was placed in
12 commercial operation in 1973. It was originally constructed as a mine-mouth unit,
13 meaning that it used local coal mined near the facility. In the mid-1990s, the primary
14 coal source was changed to Southern Powder River Basin (“SPRB”) coal from Wyoming
15 blended with local coal. The SPRB portion of the blend is currently around 90 percent.
16 The other 10% of the blend is local coal with approximately 300,000 tons of local coal
17 still burned on an annual basis.

18 La Cygne Unit 2 is a pulverized coal-fired boiler rated at 717 MW gross /
19 682 MW net and was constructed in the mid-1970s and placed in commercial service in
20 1977. Unit 2 was designed to use 100 percent SPRB coal and still does so today.

21 KCP&L’s share of La Cygne Unit 1 and Unit 2 accredited capacity is 368 MW
22 net and 341 MW net, respectively. During the period 2006 through 2009, KCP&L’s
23 share of Unit 1 and Unit 2 net generation averaged 2,447,284 and 2,365,015 MWh,

1 respectively. This represented approximately 33 percent of KCP&L's entire coal fleet
2 MWh generation for this period. With the addition of Iatan Unit 2, which was placed into
3 service in August 2010, the La Cygne units will continue to provide approximately
4 27 percent of KCP&L's entire coal fleet MWh generation. The production statistics for
5 each KCP&L generating unit for the past eleven years are shown in Schedule
6 SHH2011-1.

7 **Q: What sort of operating records have these units had?**

8 A: Both units have excellent operating records. Unit 1 performance improved significantly
9 with the change to the SPRB/local blend and a change in operating parameters. For the
10 period 2006 through 2010, Unit 1 and Unit 2 equivalent availability factors, a measure of
11 the units' performance capability at accredited capacity, averaged 76.4 percent and
12 80.6 percent, respectively, compared with KCP&L's entire coal fleet of 80.8 percent.
13 While La Cygne Unit 2 performance is right in line with the average KCP&L fleet
14 performance, La Cygne Unit 1 performance has trailed slightly the last few years due to
15 the cyclones being at the end of their useful life. The Unit 1 cyclones are currently being
16 replaced with the unit expected back in service around March 2, 2011. With this
17 replacement of the cyclones, the performance of Unit 1 is expected to return to at least
18 the average KCP&L performance, if not higher. The equivalent availability factor
19 statistics for each KCP&L generating unit for the past eleven years are shown in
20 Schedule SHH2011-2.

21 **Q: What environmental control equipment is currently in place for each of these units?**

22 A: La Cygne Unit 1 currently has a wet scrubber, which is original to the plant, for removal
23 of sulfur and particulates. The local coal has significantly higher sulfur content, around

1 4 to 6 percent, than the SPRB coal at around 0.25 to 0.90 percent. As the plant was
2 originally designed to burn 100 percent of the higher sulfur content local coal, the
3 scrubber was required to meet emissions limits at the time. In May 2007, an SCR for
4 NOx removal was installed on La Cygne Unit 1.

5 La Cygne Unit 2 currently has an electrostatic precipitator (“ESP”) for particulate
6 removal. This equipment is at the end of its useful life. It is more economical to by-pass
7 the ESP and abandon it in place than to continue to incur capital and maintenance
8 expense to operate the ESP.

9 In addition, in response to the Clean Air Mercury Rule (“CAMR”), KCP&L
10 installed mercury Continuous Emissions Monitoring Systems (“CEMS”) on both units in
11 preparation for mercury emissions monitoring and establishment of baseline emission
12 levels.

13 **II. OVERVIEW OF ENVIRONMENTAL UPGRADE PROJECT**

14 **Q: Why must KCP&L install new environmental equipment at its La Cygne**
15 **Generating Station?**

16 **A:** As discussed in the Direct Testimony of KCP&L witness Paul Ling, the Kansas
17 Department of Health and Environment (“KDHE”) is responsible for Kansas state
18 implementation of the Federal Environmental Protection Agency (“EPA”) regulations.
19 Pursuant to current and pending environmental regulations and its Regional Haze
20 Agreement (“RHA”) with KDHE, KCP&L must install best available retrofit technology
21 (“BART”) environmental equipment at La Cygne Generating Station by June 1, 2015.
22 More details regarding the specific environmental requirements and the impact on the
23 La Cygne Generating Station are contained in Mr. Ling’s testimony.

1 **Q: You stated earlier that La Cygne Unit 1 already has an existing wet scrubber. Why**
2 **is this being replaced with a new wet scrubber?**

3 A: The original wet scrubber equipment was placed into service with La Cygne Unit 1 in
4 1973. Because it is an older technology, it cannot achieve the RHA SO₂ emission limit
5 requirement effective June 1, 2015. With the existing wet scrubber, KCP&L has
6 historically seen a La Cygne Unit 1 SO₂ emission rate of between 0.2 and
7 0.3 lbs/MMBtu, but the new RHA limit is 0.1 lbs/MMBtu on a 30-day rolling station
8 average basis. Even with a new wet scrubber addition to La Cygne Unit 2, the new
9 required station average limit could not be met using the existing wet scrubber on Unit 1.
10 In addition, whenever La Cygne Unit 2 is off-line for an extended outage, La Cygne
11 Unit 1 would have to be in compliance with the station average limit by itself or not
12 operate. Notably, the existing wet scrubber on Unit 1 cannot accomplish the station
13 average RHA limit.

14 **Q: Why is the Company installing new wet scrubbers on the La Cygne units instead of**
15 **new dry scrubbers?**

16 A: Wet scrubbers will provide the capability to meet the additional emissions reductions
17 reasonably foreseeable in future regulations discussed in Mr. Ling's testimony. Wet
18 scrubbers outperform dry scrubbers thereby providing greater future compliance certainty
19 with additional and more stringent emission requirements.

20 **Q: Were the upgrades to La Cygne Unit 1 part of the Regulatory Plan that expired on**
21 **December 1, 2010?**

22 A: Yes. In 2004, KCP&L considered the appropriateness of making certain environmental
23 upgrades to its coal-fired units. The upgrades for Iatan Generating Station Unit 1 and

1 La Cygne Unit 1 were incorporated by the parties into the Stipulation and Agreement
2 approved in August 2005 under Docket No. 04-KCPE-1025-GIE (“1025 S&A” and
3 “1025 Docket,” respectively). At the time the 1025 S&A was signed, the BART
4 requirements had a proposed deadline of 2013. The environmental upgrades on Iatan
5 Unit 1 were completed and placed in operation in April 2009. The upgrades for
6 La Cygne Unit 1 were split into two phases: Phase 1 included the SCR system which, as
7 noted previously, was completed and placed in service in May 2007, and Phase 2
8 included the flue gas desulphurization system (“FGD” or “scrubber”) and the baghouse.
9 Phase 2, as documented in the quarterly status reports provided under the 1025 Docket
10 (“Quarterly Reports”), was not completed as originally projected. As discussed in the
11 Direct Testimony of KCP&L witness Chris Giles, as KCP&L progressed through the
12 necessary steps to design and engineer the Phase 2 upgrades for La Cygne Unit 1, events
13 unfolded that pushed the equipment availability and timeline for the project beyond the
14 five-year term of the 1025 S&A. Because the original timeline for the second phase of
15 Unit 1 was pushed out, it made sense to evaluate combining the engineering,
16 procurement, and construction of a FGD system and baghouse for Unit 1 with similar
17 environmental equipment for Unit 2 to meet the emission requirements under BART.
18 Mr. Ling discusses BART in his testimony.

19 **Q: Please describe the environmental equipment the Company is preparing to install.**

20 A: Mr. Ling describes the environmental requirements in his testimony. I will describe the
21 recommended technology. The recommended FGD technology for removing SO₂ from
22 the La Cygne Unit 1 and Unit 2 flue gas is a wet scrubber, which employs a limestone
23 forced oxidation (“LSFO”) process that creates a gypsum by-product. It is further

1 recommended that pulse jet fabric filter (“PJFF”) technology be utilized in baghouses for
2 particulate removal and be installed upstream of the wet scrubbers. For Unit 2 NOx
3 removal, an SCR system is recommended. To lower the operating cost of the SCR
4 system, LNBS and OFA system are recommended.

5 Categorized below in specific groups are the primary equipment and scopes of
6 work associated with implementing the necessary Air Quality Control Systems
7 (“AQCS”) on La Cygne Units 1 and 2, including La Cygne Common equipment that can
8 be used to support each unit independently or concurrently. Most of this equipment is
9 similar to that recently installed at Iatan Units 1 and 2.

- 10 ▪ Unit 1 - Equipment added downstream of the existing air preheaters:
 - 11 ○ Baghouse with PJFF technology and fly ash conveying equipment;
 - 12 ○ New induced draft (“ID”) fans; and
 - 13 ○ Wet scrubber for FGD.
- 14 ▪ Unit 2 - Equipment added downstream of the existing ESP.
 - 15 ○ Baghouse with PJFF technology and fly ash conveying equipment;
 - 16 ○ New ID fans; and
 - 17 ○ Wet scrubber for FGD.
- 18 ▪ Unit 2 - Equipment added between the existing economizer and air preheaters:
 - 19 ○ SCR system ductwork and reactors.
- 20 ▪ Unit 2 - Equipment added to the existing boiler:
 - 21 ○ LNBS; and
 - 22 ○ OFA system.

- 1 ▪ Common equipment:
 - 2 ○ Dual-flue chimney;
 - 3 ○ Reagent (limestone) preparation building and equipment;
 - 4 ○ Gypsum dewatering building and equipment;
 - 5 ○ Gypsum storage pile and handling equipment;
 - 6 ○ Electrical buildings;
 - 7 ○ Limestone reclaim/storage and material handling equipment;
 - 8 ○ Scrubber and air oxidation building;
 - 9 ○ Paint shop; and
 - 10 ○ Warehouse(s).
- 11 ▪ Abandon in place:
 - 12 ○ Existing Unit 1 and 2 chimneys;
 - 13 ○ Existing Unit 1 scrubber;
 - 14 ○ Existing Unit 2 ESP; and
 - 15 ○ Existing Unit 1 and 2 ID fans, to the extent possible.
- 16 ▪ Demolish and remove debris:
 - 17 ○ Existing air quality control maintenance shop (only if required to make
 - 18 room for new duct support steel);
 - 19 ○ Existing Unit 1 warehouse; and
 - 20 ○ Existing paint shop.

1 **Q: Each La Cygne Unit currently has its own independent separate chimney. Why is a**
2 **common dual-flue chimney needed for this project?**

3 A: There are two principle reasons a new common chimney is required for this project.
4 First, the current standards to size a chimney liner for service downstream of a wet
5 scrubber indicate that the liners within the existing chimneys are undersized for the
6 environmental equipment that will be installed with these project additions. Second, any
7 attempt to replace the existing liners and re-use the existing chimney shells would be
8 uneconomical as it would require each unit to be out of service for a protracted period of
9 time. Replacement of the two existing chimneys with a dual-flue chimney (two liners
10 within a common single shell) is the most cost-effective option.

11 **Q: What will become of the existing chimneys?**

12 A: The existing Unit 1 and Unit 2 chimneys are expected to be abandoned and maintained in
13 place. From an economic perspective, this is a more cost-effective option than
14 demolition and removal. Additionally, construction time to meet the June 2015
15 completion requirement for this project, site congestion, and proximity to other station
16 components all favor abandoning and maintaining in place rather than demolition and
17 removal at this time. A study to ascertain the ability of the existing Unit 1 shell, to
18 withstand additional wind loading that may result from installation of the new dual-flue
19 chimney is ongoing. Depending on the study findings, all, a portion, or none of the
20 existing Unit 1 chimney may need to be demolished and removed.

1 **III. PROJECT PROGRESS TO DATE**

2 **Q: Please describe the design and engineering studies and other preliminary work**
3 **completed for these projects to date.**

4 A: The following chronological discussion is excerpted and summarized from the Quarterly
5 Reports provided to Staff, CURB and other parties under the 1025 S&A from first quarter
6 2006 through third quarter 2010. This discussion outlines the progress on these projects
7 throughout the term of the 1025 S&A.

8 **First Quarter 2006**

9 In March of 2006, KCP&L engaged Black & Veatch Engineering
10 (“B&V”) to develop recommendations for the footprint (location) of the Unit 1
11 Phase 2 equipment and to evaluate the necessary duct tie-ins and expected unit
12 performance impacts.

13 **Third Quarter 2006**

14 The draft report was completed in July 2006 and revised in October 2006.
15 KCP&L utilized the alternative cost estimates from this report along with the
16 impacts of environmental regulation changes, to evaluate options for Unit 1.

17 **Fourth Quarter 2006**

18 As part of a separate determination of the need and timing for a scrubber
19 and baghouse on La Cygne Unit 1, KCP&L hired Burns & McDonnell to perform
20 a study to assess whether retrofitting the existing Unit 1 scrubber facility was
21 feasible and, if so, whether such a retrofit was a better option than installing an
22 entirely new scrubber. This work was done in parallel to the preliminary design
23 work that B&V performed to assess the placement and tie-in of equipment. The

1 Burns & McDonnell study was issued in May 2006 and concluded that due to the
2 obsolete technology utilized on the existing Unit 1 scrubber, modifications to
3 allow the scrubber to perform at the prescribed compliance limits under BART
4 would not be practical. A new, single module scrubber was recommended as the
5 preferred option. Based upon this assessment, KCP&L moved forward with the
6 design, procurement and construction of a new scrubber and baghouse for
7 La Cygne Unit 1 and also with engagement of an engineering firm to provide the
8 preliminary design, scope of work, cost estimate and schedule for the project.

9 The original schedule for Phase 2 of the La Cygne Unit 1 environmental
10 upgrades included in the 1025 S&A was for completion by May 31, 2010. As
11 reported in the fourth quarter 2006 quarterly report, the then-current market data
12 obtained from environmental equipment manufacturers showed that the lead time
13 for the needed equipment had moved out significantly pushing the estimated
14 completion date for Phase 2 out to the 2011 to 2012 timeframe – beyond the end
15 of the 1025 S&A. Even with this delay, KCP&L still expected to be able to meet
16 the BART regulations by the 2013 deadline expected at that time.

17 **First Quarter 2007**

18 During first quarter 2007, KCP&L was in the process of hiring an owner’s
19 engineer (“OE”) to work with KCP&L to define project scope, equipment design
20 and required performance, equipment layout, balance of plant scope, schedule and
21 a preliminary cost estimate. KCP&L set up interviews with three experienced
22 engineering firms.

1 **Second Quarter 2007**

2 In May 2007, KCP&L hired Sargent & Lundy (“S&L”) to prepare a
3 Project Definition Report (“PDR”) defining the work scope, cost estimate and
4 schedule for each of the Unit 1 and Unit 2 environmental upgrade projects. The
5 required in-service dates for BART compliance created an opportunity to combine
6 construction efforts for both projects and achieve savings, similar to what had
7 been done with the Iatan Unit 1 and Unit 2 projects, as opposed to separately
8 contracting for Units 1 and 2. As a result, KCP&L also requested S&L to
9 evaluate the advantage in design, procurement, construction and operation of
10 combining the installation of these upgrades into a single project.

11 **Third Quarter 2007**

12 In November 2007, KCP&L signed a Regional Haze Agreement in
13 negotiations with the KDHE supporting KCP&L’s intention to reduce La Cygne
14 Unit 1 and Unit 2 emissions to Regional Haze Rule compliance limits with
15 BART. Under the agreement, KCP&L agreed to emission limits for La Cygne
16 Units 1 and 2 that would meet, or be less than, the presumptive emission limits
17 established under the Regional Haze Rule. KDHE included the agreement limits
18 in its Kansas Regional Haze State Implementation Plan (“SIP”) which KDHE
19 submitted to the EPA for approval. At that time (fourth quarter 2007) EPA
20 approval was expected by the end of 2008. The agreement with KDHE required
21 KCP&L to install and operate BART as expeditiously as practical, but in no event
22 later than five years after approval of the SIP or June 1, 2015, whichever date
23 occurred first.

1 **First, Second and Third Quarters 2008**

2 The S&L PDR was completed in February 2008. KCP&L further
3 requested S&L to develop an economic analysis of the technology options. A
4 draft of the S&L report on the economic analysis of technology options was
5 presented to KCP&L in May 2008. KCP&L interviewed and issued RFPs to three
6 highly qualified engineering firms for an owner’s engineer role in performing
7 certain preliminary services for the project. S&L was selected on the basis of its
8 strong proposal for the work and overall experience in the AQCS market.
9 Project-specific conceptual engineering began during third quarter 2008 under the
10 terms of a Limited-Notice-To-Proceed (“LNTP”) agreement while contract
11 negotiations for the final OE contract continued. Discussions continued with
12 general contractors and equipment vendors to discuss equipment options,
13 availability, and schedule.

14 **Fourth Quarter 2008**

15 The final S&L report on economic analysis of the technology options was
16 completed in November 2008. Site related geotechnical investigation
17 specifications were issued for bid on December 30, 2008. The dual-flue chimney
18 specifications were issued for bid on December 31, 2008.

19 **First Quarter 2009**

20 KCP&L contracted with Geotechnology Inc. to perform the site
21 geotechnical investigation. This work commenced in March 2009. Competitive
22 bids for supply and installation of a dual-flue chimney were received in March
23 2009.

1 EPA approval of the Kansas Regional Haze SIP did not occur in 2008 as
2 expected. The anticipated timeframe for EPA approval moved to late 2009 or
3 early 2010 which also revised the anticipated compliance deadline under the
4 KDHE RHA. KCP&L determined to revise its engineering and construction
5 schedules to address the current, anticipated RHA deadline. KCP&L set plans to
6 work with S&L to outline and execute work in 2009 deemed necessary to
7 maintain the schedule and fluidity of the project.

8 **Second Quarter 2009**

9 Soil borings, as part of the geological investigation contract, were nearing
10 completion. A chimney work package was competitively bid. Draft technical
11 specifications for bid packages on a wet scrubber for FGD and baghouse utilizing
12 PJFF technology were under development. KCP&L and S&L identified a limited
13 amount of scope to execute during 2009. A Statement of Work (“SOW”), subject
14 to the provisions of a May 2009 Master Service Agreement, outlining the
15 engineering services to be performed during 2009 was signed with S&L. The
16 services included preparing design criteria, specifications, schedules, procurement
17 planning, and modeling.

18 **Third and Fourth Quarters 2009**

19 S&L provided an analysis of contracting options that could be employed
20 for the La Cygne project as part of an effort by KCP&L to examine the potential
21 impacts of anticipated environmental regulations and market forces in the current
22 utility construction climate. Contract negotiations associated with the chimney
23 work package were put on hold pending completion of the contracting strategy

1 review. Issuance of RFPs for the scrubber, and LNBS and overfire air system
2 were also put on hold. The LNTP issued to S&L in third quarter 2008 was
3 allowed to expire in light of the contracting strategy review. In December 2009,
4 KCP&L issued RFPs to twelve bidders for owner's engineer services to assist
5 with evaluating a contract strategy for the construction work. Bids were received
6 at the end of December.

7 All geotechnical sampling was completed and Geotechnology Inc.
8 submitted a final report to KCP&L. An RFP for a site survey work package was
9 issued, competitive bids were received, and evaluation began; however, a contract
10 was not issued for the survey scope noted.

11 **First Quarter 2010**

12 B&V was awarded the OE contract in February 2010. B&V was hired to
13 perform various engineering studies to consider and validate previous scope and
14 design assumptions. Studies include, but were not limited to, a National Fire
15 Protection Association review, an induced draft fan study, a low load study, and
16 an ESP review. B&V also supported the ongoing development of site
17 preparation, warehouse, survey, and baseline testing specifications and submitted
18 recommendations for several of the technical specification sections evaluated for
19 inclusion in the bidding documents for prospective Engineer-Procure-Construct
20 ("EPC") contractors.

21 In order to identify qualified bidders for receipt of a future EPC RFP,
22 KCP&L prepared and issued a Request for Information ("RFI") to potential EPC

1 contractors, engineers, and equipment suppliers in February 2010. RFI responses
2 were received at the end of March 2010.

3 **Second Quarter 2010**

4 Based upon the RFI responses, a RFP containing commercial terms and
5 technical specifications for EPC services was issued to six EPC bidders in June
6 2010.

7 Baseline emissions testing was performed on La Cygne Unit 2 in May
8 2010 by Burns & McDonnell and witnessed by B&V. The information from this
9 testing was incorporated into the EPC services RFP. An RFP for a survey
10 contract was issued in April 2010 and awarded in May 2010. KCP&L and B&V
11 developed the commercial terms and technical specifications for site development
12 construction services and issued an RFP for these services in June 2010.

13 KCP&L continued to evaluate the previously obtained dual-flue chimney
14 bids and its decision to award the chimney contract in advance of the award of an
15 EPC services contract. A LNTP was granted to Commonwealth Dynamics, Inc.
16 (“CDI”) for construction of the chimney.

17 B&V continued to perform various scopes of work to support the project
18 including, but not limited to, development of (1) the storm water pollution
19 prevention plan (“SWPPP”); (2) the project execution plan (“PEP”); (3) a plant
20 automation system (“PAS”) study to assess the existing digital control system
21 (“DCS”) equipment, instrumentation, and logic; and (4) a service water study to
22 identify the most appropriate and reliable source of service water for the new
23 AQCS equipment. B&V completed its National Fire Protection Association

1 review, induced draft fan study, low load study, and electrostatic precipitator
2 review.

3 KCP&L submitted its Air Permit and Land Disturbance Permit application
4 to KDHE in May and June 2010, respectively. A revised Air Permit application
5 was issued by KDHE in June 2010. The Land Disturbance Permit was approved
6 in late June 2010 by KDHE.

7 **Q: What progress was made in the last half of 2010?**

8 A: An Executive Oversight Committee (“EOC”) was established in July 2010 for the
9 purpose of consultation and recommendations on the La Cygne Environmental project
10 and a formal charter for the EOC was adopted and approved in September 2010.

11 Five bidders indicated they would be responding to the RFP which requested firm
12 fixed price EPC proposals. Executive sessions were conducted with each of the five
13 bidders in July 2010 in order to engage in a high-level dialogue about the project. Formal
14 processes for (1) bid question/response tracking; (2) issuance of addendums; and (3) on-
15 site bidder visits; and (4) approved lists of vendors/suppliers were closely managed by
16 KCP&L to ensure all bidders had access to the same information and were treated
17 equitably.

18 Site survey work was completed by Shafer, Kline & Warren in August 2010. A
19 service water study was completed by B&V in August 2010. The dual-flue chimney
20 contract was awarded to CDI in August 2010 with the planned intent to assign this
21 contract to the future successful EPC bidder. A PEP was drafted by B&V and reviewed
22 by KCP&L.

1 An RFP for legal services was issued and seven bid proposals were received in
2 July 2010. A legal services review team identified four shortlist bidders and developed
3 criteria for an evaluation matrix that was used during bidder interviews in August 2010.
4 Schiff Hardin was awarded an outside legal services contract on October 18, 2010 with a
5 scope of services limited to initial contracting for the project. A decision regarding long-
6 term outside legal counsel representation will be made at a later date.

7 EPC bid proposals were received from five pre-qualified bidders on
8 November 12, 2010. In conjunction with the RFP responses, KCP&L closely managed
9 (1) over two hundred questions/responses; (2) eleven comprehensive addendums;
10 (3) numerous site visits by the bidders and (4) updated lists of eligible vendors/suppliers.

11 Initial reviews of the bid proposals involved clarifying questions/responses and
12 applying necessary bid adjustments to get as close to an “apples-to-apples” specification
13 compliant comparative bid price as possible. Ranking criteria were developed and
14 scoring matrixes were completed in an extensive evaluation of the bid proposals.
15 Reviews, analysis and rankings for commercial, technical and costs were completed
16 December 17, 2010 by collaborative teams comprised of representatives from KCP&L,
17 Westar, B&V and Schiff Hardin.

18 The results of the reviews, analysis, evaluations and ranking summary were
19 provided to the EOC on December 20, 2010. The recommendation of the EOC was to
20 move forward with the top three proposals with further review of technical issues more
21 reference verifications and additional due diligence. The other two bidders were advised
22 they were on hold for possible future discussion. All five bidders were advised of their
23 status by executive communication completed by December 30, 2010.

1 A revised application for an air permit for the generating station was submitted
2 and accepted by KDHE on November 9, 2010. A second air permit application was
3 submitted on November 22, 2010 for fabrication of the fiberglass chimney liner on the
4 LaCygne site. The PEP was completed by B&V and KCP&L in November 2010. Other
5 activity included completion of the site prep work with only minor fencing grading and
6 concrete work ongoing. The first trailer of the construction campus was installed on site.

7 **Q: What work has been completed on the project so far in 2011?**

8 A: Company witnesses Forrest Archibald and Robert Bell discuss the status and
9 development of the cost estimate and EPC contractor evaluation in their respective
10 testimonies.

11 KDHE has informed KCP&L that a draft of the air permit for the generating
12 station will be published for public notice and comment in February 2011. KDHE
13 continues to review the air permit application for fiberglass chimney liner fabrication and
14 a chimney approval/permit. A stop work letter was issued to CDI, the chimney
15 contractor, due to EPC discussions and this docket.

16 **Q: What is the current status of the project?**

17 A: KCP&L is continuing its evaluation of the EPC bid proposals received and expects to
18 reduce the final bidder list during first quarter 2011 and then negotiate a final contract.
19 As stated in Mr. Archibald's testimony, KCP&L and Westar are confident in the EPC
20 estimate given the methodology used in its development. KCP&L does not foresee
21 beginning significant construction until a decision is rendered by the Commission in this
22 predetermination docket.

1 **IV. OVERVIEW OF ALTERNATIVES AND TIMELINE**

2 **Q: Were other options analyzed as alternatives to installing the proposed**
3 **environmental upgrades at La Cygne Units 1 and 2 in KCP&L's energy portfolio**
4 **(example, new plant, purchased power, etc)?**

5 A: Yes. KCP&L analyzed several alternative resource plans that included retirement of both
6 La Cygne Units 1 and 2 and alternative plans that included retirement of either La Cygne
7 Unit 1 or Unit 2. These alternative resource plans included new gas-fired combined cycle
8 generation, gas-fired combustion turbines, or a new super critical coal plant. The
9 Company has also taken into account the impact of DSM programs on the options in its
10 analysis. Additional detail on the analysis and results can be found in the Direct
11 Testimony of Company witness Burton Crawford.

12 **Q: Why is KCP&L recommending Commission approval of the environmental**
13 **upgrades at La Cygne?**

14 A. As Mr. Crawford describes more fully in his Direct Testimony, we have analyzed the
15 alternatives to making the environmental upgrades at La Cygne and this is the most
16 economic option for our customers. Our models take into consideration various
17 alternatives, both from an upfront construction cost and an ongoing energy cost
18 standpoint, and the environmental upgrades are clearly the most economic choice for our
19 customers. While the La Cygne units are over 30 years old, these assets play a significant
20 role in keeping energy prices low for our customers. And, as pointed out by Company
21 witness Wm. Edward Blunk in his Direct Testimony, coal prices have historically been
22 less volatile than gas prices; another point in favor of retrofitting the La Cygne units.

1 **Q: What is the timeline for completion of the planned environmental upgrade projects?**

2 A: The upgrades must be completed by June 1, 2015 or the units must be shut down and may
3 not be restarted unless and until such time as the upgrades are complete.

4 **V. 492 DOCKET QUESTIONS**

5 **Q: Pursuant to the 492 Docket, please address whether the La Cygne environmental**
6 **retrofit projects that are currently planned and under consideration in this**
7 **predetermination docket represent the end of the upgrading process for the**
8 **La Cygne generating units, or whether these environmental retrofit projects, in**
9 **turn, require additional improvements to these units.**

10 A: It is expected that the current retrofit projects will represent the vast majority of the
11 upgrading process for the La Cygne generating units based upon current and proposed
12 environmental regulations. These projects include all “improvements” needed to address
13 the current regulations. KCP&L cannot anticipate or predict with precision the impact of
14 regulations that may be promulgated sometime in the future. However, as Mr. Crawford
15 more fully explains in his testimony, we do include in the modeling an anticipated cost of
16 potential upgrades based on environmental rules that are being contemplated. So, for
17 example, a cooling tower currently is not required at La Cygne, we know there are rules
18 being considered that may require a cooling tower at some point in the future. In the
19 Company’s analysis, we conferred with our environmental experts on a best guess at
20 when this would be required, received estimates on the costs from engineering, and then
21 included the costs in the analysis as if they would happen.

1 **Q: Has analysis been performed on how the planned but incomplete environmental**
2 **upgrades for the La Cygne units may impact the expected life of the La Cygne units**
3 **following completion of the upgrades? If so, what criteria were used for analysis?**

4 A: With the exception of the LNBS and the OFA system, the retrofit equipment is typically
5 referred to as “back-end” equipment. In other words, this “back-end” equipment is
6 designed and utilized to reduce emissions downstream of the boiler and has no impact on
7 the mechanical useful life of the primary components of the boiler and generation
8 equipment. Likewise, the LNBS and OFA system reduce emissions and have no impact
9 on boiler or other equipment mechanical life. With a complex and integrated electric
10 generating machine the size of La Cygne Station, various individual components such as
11 the existing Unit 1 wet scrubber wear out and/or become obsolete over different time
12 periods. In order to maintain reliability, KCP&L periodically replaces components as
13 necessary, such as the recent replacement of the Unit 1 cyclones to extend the life of the
14 Units. Because a coal plant is such an expensive asset to build initially, it makes sense to
15 continue replacing components as needed to extend the life of the original asset.
16 Mr. Crawford describes in his testimony how the MIDAS™ model reflects potential
17 additional investments in La Cygne Units 1 and 2 beyond normal maintenance outages.
18 If the environmental upgrades are approved, KCP&L envisions this asset producing low
19 cost energy for our customers well into the future.

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

21 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 SCOTT HEIDTBRINK

STATE OF MISSOURI)
) ss
COUNTY OF JACKSON)

Scott Heidtbrink, being first duly sworn on his oath, states:

1. My name is Scott Heidtbrink. I work in Kansas City, Missouri, and I am employed by Kansas City Power & Light Company as Senior Vice President - Supply.

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 twenty-four (24) 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.

Scott Heidtbrink
Scott Heidtbrink

Subscribed and sworn before me this 15th day of February, 2011.

[Signature]
Notary Public

My commission expires: May 23, 2014

**NET GENERATION (MWh) - KCP&L
December 2010**

KCP&L Share

2010	HAWTHORN	MONTROSE			LA CYGNE		IATAN		KCP&L TOTAL COAL	WOLF CREEK	KCP&L TOTAL COAL+NUC	SPEARVL WIND	HAW	OTHER GAS CT'S	NE OIL CT'S	KCP&L TOTAL CO
		#5	#1	#2	#3	#1	#2	#1								
JAN	388,781	104,120	105,349	108,226	220,031	231,102	329,564	0	1,487,173	415,005	1,902,178	26,333	(1,131)	4,863	(313)	1,931,930
FEB	194,278	77,283	97,252	99,166	185,001	127,640	186,960	0	967,580	377,513	1,345,093	23,787	(744)	2,068	(365)	1,369,839
MAR	7,909	98,320	102,326	107,063	192,042	143,992	369,519	0	1,021,171	307,327	1,328,498	37,583	(788)	6,893	(337)	1,371,850
APR	295,683	90,147	88,413	49,589	252,363	40,569	351,954	0	1,168,718	403,005	1,571,723	36,142	(410)	932	(258)	1,608,129
MAY	370,247	66,251	60,520	67,776	216,963	208,928	271,300	0	1,261,984	415,289	1,677,273	31,636	7,433	4,152	(226)	1,720,268
JUN	367,727	90,261	90,313	88,012	208,349	233,344	340,473	0	1,418,479	395,620	1,814,099	27,342	51,864	8,325	(153)	1,901,477
JUL	338,583	104,115	96,139	109,989	228,965	183,076	281,898	0	1,342,764	406,041	1,748,805	29,604	75,365	23,230	20	1,877,023
AUG	385,813	94,447	103,387	110,645	211,269	232,715	320,925	180,174	1,639,374	406,782	2,046,156	27,548	71,904	24,495	(35)	2,170,067
SEP	371,807	76,734	88,862	86,706	233,886	222,998	326,578	107,163	1,514,735	398,292	1,913,027	27,415	18,789	6,913	(123)	1,966,020
OCT	386,335	80,725	91,765	98,038	200,198	202,704	269,307	163,469	1,492,542	200,534	1,693,076	29,030	354	1,824	1,135	1,725,419
NOV	353,617	49,585	58,601	32,874	61,412	220,187	260,678	233,479	1,270,432	402,097	1,672,529	32,561	(858)	(261)	(63)	1,703,908
DEC	386,624	83,083	102,959	92,465	(2,664)	210,737	318,038	289,383	1,480,624	363,661	1,844,285	0	(735)	1,010	(259)	1,844,301
YTD	3,847,404	1,015,070	1,085,885	1,050,548	2,207,815	2,257,992	3,627,193	973,668	16,065,575	4,491,166	20,556,741	328,981	221,044	84,444	(979)	21,190,231

KCP&L 10 YR HISTORY

2009	3,982,039	1,014,358	1,047,280	1,149,954	2,450,766	2,179,354	2,683,388	----	14,507,139	4,121,201	18,628,340	353,724	188,380	41,681	(929)	19,211,196
2008	3,501,092	1,028,702	1,104,162	1,169,686	2,371,115	2,498,747	2,972,879	----	14,646,383	3,993,647	18,640,030	419,037	288,943	90,243	(1,567)	19,436,685
2007	3,730,866	986,326	1,022,558	1,072,938	2,488,398	2,643,466	2,949,807	----	14,894,359	4,873,482	19,767,841	304,714	372,291	169,329	2,264	20,616,438
2006	3,825,029	1,090,420	995,664	1,028,123	2,478,856	2,138,491	3,499,737	----	15,056,320	4,394,609	19,450,929	105,954	310,735	252,414	972	20,121,004
2005	3,716,185	1,124,149	1,124,183	1,094,569	1,900,306	2,600,732	3,434,268	----	14,994,392	4,145,830	19,140,222	----	334,668	131,226	7,037	19,613,153
2004	3,950,362	983,854	1,155,408	960,520	2,474,478	2,617,444	3,545,905	----	15,687,970	4,762,379	20,450,349	----	125,107	31,524	(2,129)	20,604,851
2003	4,012,284	976,380	924,755	785,126	2,247,376	2,589,911	3,475,296	----	15,011,128	4,178,119	19,189,247	----	173,159	92,868	4,080	19,459,354
2002	4,023,651	1,003,022	997,748	660,270	2,223,453	2,458,927	2,813,546	----	14,180,618	4,249,563	18,430,181	----	296,380	74,559	13,959	18,815,079
2001	1,985,289	790,103	941,377	1,017,786	1,465,522	2,149,029	3,158,781	----	11,507,887	4,862,889	16,370,776	----	374,668	94,752	42,328	16,883,783
2000	0	975,157	794,385	1,034,923	2,022,817	2,311,485	2,738,469	----	9,877,236	4,258,582	14,135,818	----	523,878	171,321	106,018	14,950,985
Record-Yr	****	****	****	****	****	****	****	****	****	4,888,272-98	****	****	****	****	****	****

Shaded values represent records. Records not within last 10 years are shown on Record-Yr line. Records verified back to 1973.

SCHEDULE SHH2011-1

EQUIVALENT AVAILABILITY % - KCP&L December 2010

KCP&L Share

2010	HAWTHORN	MONTROSE			LA CYGNE		IATAN		KCP&L TOTAL COAL	WOLF CREEK	KCP&L TOTAL COAL+NUC
	#5	#1	#2	#3	#1	#2	#1	#2			
JAN	94.55	99.59	99.70	98.88	80.45	91.00	91.64	0.00	92.19	99.38	93.58
FEB	51.88	81.89	99.99	98.31	77.14	57.10	59.54	0.00	67.71	100.00	73.94
MAR	5.37	95.98	99.92	100.00	71.49	57.13	98.07	0.00	64.84	76.51	67.09
APR	78.71	99.72	99.30	53.20	95.26	19.05	83.56	0.00	74.58	100.00	79.49
MAY	93.43	72.19	66.97	70.61	80.12	87.52	80.47	0.00	82.32	100.00	85.74
JUN	95.34	92.39	95.94	88.93	79.64	97.13	94.79	0.00	92.28	99.73	93.72
JUL	83.40	99.27	92.17	99.41	83.60	76.01	77.53	0.00	84.11	99.80	87.14
AUG	96.60	90.95	98.57	99.46	79.32	94.16	92.61	0.00	92.52	100.00	93.96
SEP	97.06	86.67	99.97	92.71	90.15	93.15	95.53	100.00	95.12	100.00	95.93
OCT	96.95	96.91	99.93	99.51	74.52	81.88	77.24	100.00	89.37	46.83	82.31
NOV	94.71	89.27	99.91	96.80	36.38	89.58	80.11	87.29	82.46	100.00	85.37
DEC	96.90	87.05	99.19	89.30	0.00	83.93	90.32	84.20	77.98	100.00	81.63
YTD	82.22	91.05	95.90	90.61	70.57	77.50	85.29	94.18	83.33	93.40	85.17
KCP&L 10 YR HISTORY											
2009	84.26	86.52	89.93	94.42	76.94	74.31	65.41		78.88	85.48	80.15
2008	72.23	81.33	89.16	90.49	74.35	84.72	75.38	----	78.49	82.69	79.31
2007	77.14	81.15	82.01	80.77	78.08	90.09	74.42	----	79.65	99.96	83.64
2006	82.60	89.09	80.38	77.64	82.14	76.26	91.81	----	83.38	90.60	84.80
2005	79.36	87.83	85.69	78.65	67.36	95.12	86.02	----	82.27	85.68	82.94
2004	81.75	76.14	93.40	76.08	83.71	90.23	86.65	----	84.35	98.19	87.09
2003	84.60	83.04	72.00	63.82	77.32	89.91	85.19	----	81.71	86.43	82.65
2002	88.99	94.56	85.29	58.84	80.12	88.72	70.38	----	81.46	88.25	82.80
2001	89.28	75.55	89.23	91.26	54.27	79.39	80.06	----	78.17	99.63	82.88
2000	0.00	91.87	78.58	95.33	75.53	85.62	72.46	----	80.79	85.00	81.83
Record-Yr	****	96.96 - 94	99.74 - 90	97.77 - 88	****	98.12 - 90	95.49 - 94	****	85.75 - 94	****	****

Shaded values represent records. Records not within last 10 years are shown on Record-Yr line. Records verified back to 1982.

$$\text{Equivalent Availability \%} = \frac{\text{Period Hrs (h)} \times \text{Net Accredited Capacity (MW)} - \text{Outage (MWh)} - \text{Derating (MWh)}}{\text{Period Hrs (h)} \times \text{Net Accredited Capacity (MW)}} \times 100$$