BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS

DIRECT TESTIMONY OF

PAUL M. LING

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

Q: Please state your name and business address.

A: My name is Paul M. Ling. My business address is 1200 Main Street, Kansas City, Missouri 64105.

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

A: I am employed by Kansas City Power & Light Company ("KCP&L" or the "Company") as Manager – Environmental Services.

Q: What are your responsibilities?

A: My responsibilities include managing the environmental compliance, permitting, and policies of KCP&L.

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

A: I have a B.S. in Civil Engineering awarded in May 1992 from Iowa State University. I have an M.S. in Civil Engineering awarded in December 1994 from the University of

Kansas. I have an M.B.A. awarded in May 1997 from the University of Kansas. I have a J.D. awarded in August 2001 from the University of Kansas. I am a registered professional engineer in Missouri and Kansas and was employed by Black and Veatch for seven years designing generation facilities. I have been employed by KCP&L for the last nine years, for the first four years as an attorney, member of the Missouri and Kansas Bars, in the Legal Department and for the last five years as the manager of the Environmental Services Department.

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

A: No.

Q: What is the purpose of your testimony?

A: This testimony describes significant current environmental regulations and active initiatives surrounding proposed legislation and rulemakings that require or impact the proposed emission controls at the La Cygne Generating Station and support the need to install emission control technologies to reduce emissions from the La Cygne Generating Station. This includes the Regional Haze Agreement that KCP&L executed at the request of the Kansas Department of Health and Environment ("KDHE") for inclusion in the Kansas Regional Haze State Implementation Plan ("SIP") which requires the proposed equipment be installed at La Cygne Generating Station by no later than June 1, 2015. Additional testimony supporting the timing of these investments is provided by Mr. Scott Heidtbrink and Mr. Bob Bell. My testimony also responds to two of the questions posed by the Commission in Docket No. 11-GIME-492-GIE (the "492 Docket") as they relate

to the La Cygne Generating Station. Specifically, I will address the following two questions from paragraph 8 of the Commission's January 27, 2011 Order:

(a) What Environmental Protection Agency ("EPA") and KDHE regulatory programs [current and emerging] apply to the La Cygne Generating Station? and

(b) What are the emission allowances for each unit?

Q: To summarize your testimony, is it correct to say that the proposed emission control equipment for La Cygne Generating Station under consideration in this docket is (a) currently required by existing regulations, and (b) in addition, will likely be required by further regulations announced by EPA and anticipated to soon be effective?

A: Yes. The proposed emission control equipment currently is required to be installed pursuant to the Region Haze Rule and the executed Regional Haze Agreement. In addition, as discussed throughout my testimony, there are various expected actions, including finalization of several rules currently proposed or announced and under review, enactment of legislation currently being discussed, and approval by the EPA of the pending recommendations of National Ambient Air Quality Standards ("NAAQS") non-attainment of the Kansas City area, that will require the installation of some or all of this proposed emission control equipment in the near future even absent the Regional Haze Rule.

Q: Is it also correct to say that a Kansas state agency, namely KDHE, specifically requested an agreement from KCP&L to implement the environmental controls under consideration in this docket for compliance with the Regional Haze Rule on a

specific schedule regardless of the statutes or outcome of other existing or proposed environmental regulations?

A: Yes. The resulting agreement, the Regional Haze Agreement with KDHE, is discussed in my testimony.

I. CURRENT ENVIRONMENTAL REGULATIONS

Q: What are the current environmental regulations that affect the La Cygne Generating Station?

A: There are three significant regulations currently affecting the La Cygne Generating Station: (1) the Regional Haze Rule, (2) the NAAQS, and (3) the Acid Rain Program.

A. REGIONAL HAZE RULE

Q: What is the Regional Haze Rule?

A: Under the 1999 Regional Haze Rule, states are required to set periodic goals for improving visibility in the 156 natural areas in the United States. As states work to reach these goals, they must develop Regional Haze implementation plans that contain enforceable measures and strategies for reducing visibility-impairing pollution.

The pollutants that reduce visibility include fine particulate matter ("$PM_{2.5}$"), and compounds which contribute to $PM_{2.5}$ formation, such as nitrogen oxides ("NOx"), sulfur dioxide ("SO_2"), and, under certain conditions, volatile organic carbons ("VOCs") and ammonia.

States were to develop their implementation plans by December 2007. States were to identify the facilities that would have to reduce emissions under BART and then set BART emissions limits for those facilities.

In June 2005, the EPA finalized amendments (also referred to as the Best Available Retrofit Technology ("BART") Rule) to the 1999 Regional Haze Rule. These amendments apply to the provisions of the Regional Haze Rule that require emission controls known as best available retrofit technology, or BART, be installed for industrial facilities emitting air pollutants that reduce visibility by causing or contributing to regional haze.

The BART requirements of the Regional Haze Rule apply to facilities built between 1962 and 1977 that have the potential to emit more than 250 tons a year of visibility-impairing pollution. Those facilities fall into 26 categories, including utility and industrial boilers, and large industrial plants such as pulp mills, refineries and smelters.

Q: How does the Regional Haze Rule affect the La Cygne Generating Station?

A: The Regional Haze Rule directs state air quality agencies (KDHE for Kansas) to identify whether visibility-reducing emissions from sources subject to BART are below limits set by the state or whether retrofit measures are needed to reduce emissions. It also directs these agencies to file Regional Haze SIPs with the EPA for approval.

Q: Has KDHE complied with these requirements?

A: Yes. KDHE determined La Cygne Generating Station Units 1 and 2 were BART-eligible units subject to BART requirements and required a full BART analysis be performed on these units. KCP&L timely submitted the BART analysis covering both units in August 2007. From the BART analysis, KDHE determined both Units 1 and 2 currently complied with the presumptive BART limits based on KDHE's BART guidance.

KDHE determined to negotiate agreements with the owners of Kansas facilities subject to BART and approached KCP&L to negotiate an agreement regarding the La Cygne Generating Station. KCP&L and Westar each executed Regional Haze Agreements for their respective BART-eligible facilities at the request of KDHE. KCP&L as the operator of La Cygne Generating Station, executed the agreement for that facility. The agreements contain the applicable emission limits, compliance schedules, and monitoring requirements. KDHE incorporated these executed Regional Haze Agreements into the Kansas Regional Haze SIP.

The KDHE held a hearing regarding the proposed Kansas Regional Haze SIP in August 2008. KDHE received comments and held a second hearing in August 2009. KDHE submitted the Regional Haze SIP for approval to EPA in October 2009. Compliance with the SIP is required no later than five years after the date of EPA approval, but as indicated in this testimony, the Regional Haze Agreement with KDHE requires KCP&L to install the proposed emission controls at La Cygne Generating Station no later than June 1, 2015.

KDHE is required to revise its Regional Haze SIP by 2018, and every ten years thereafter. Future BART progress goals in these revised Kansas Regional Haze SIPs could require further reductions in SO_2, NOx and fine particulate matter emissions from the proposed emission controls at La Cygne Generating Station.

Q: Please describe the Regional Haze Agreement executed by KCP&L and KDHE.

A: KDHE requested the execution of Regional Haze Agreements for all the BART-eligible facilities in Kansas for inclusion in their Regional Haze SIP. KCP&L and KDHE executed a Regional Haze Agreement regarding La Cygne Generating Station in

November 2007 incorporating limits for stack PM emissions, as well as limits for NOx and SO_2 emissions that complied with the presumptive limits under BART. KCP&L further agreed to use its best efforts to install emission control technologies to reduce those emissions from the La Cygne Generating Station prior to the required compliance date under BART, but in no event later than June 1, 2015.

Q: Why did KCP&L agree to execute the Regional Haze Agreement with KDHE?

A: As described above, KDHE determined La Cygne Generating Station Units 1 and 2 were BART-eligible and required presumptive emission limits to be met by the units. KDHE approached KCP&L to negotiate and ultimately executed an agreement that contained the BART requirements for inclusion in their Regional Haze SIP.

Q: What is the impact of the Collaboration Agreement that KCP&L executed on the Regional Haze Agreement?

A: In March 2007, KCP&L, the Sierra Club and the Concerned Citizens of Platte County entered into a Collaboration Agreement. In the Collaboration Agreement, KCP&L agreed to seek a consent agreement, which it has done through the Regional Haze Agreement, with the KDHE incorporating limits for stack PM emissions, as well as limits for NOx and SO_2 emissions at the La Cygne Generation Station that will be below the presumptive limits under BART. KCP&L further agreed to use its best efforts to install emission control technologies to reduce those emissions from its La Cygne Generating Station prior to the required compliance date under BART, but in any event no later than June 1, 2015.

Q: What additional emission controls are required for the La Cygne Generating Station to comply with the Regional Haze Rule?

A: KCP&L will install (1) low NOx burners and selective catalytic reduction technologies ("SCR") on Unit 2 to remove NOx; (2) scrubbers on both Units 1 and 2 to remove SO_2; (3) additional and/or upgraded particulate removal equipment on both Units 1 and 2; and (4) along with various associated support equipment, including but not limited to, (i) new dual flue stack; (ii) induced draft fans; (iii) emergency generator and pump; and (iv) ash, gypsum and limestone storage and handling equipment.

B. NATIONAL AMBIENT AIR QUALITY STANDARDS

Q: What is the NAAQS?

A: The Clean Air Act ("CAA") requires the EPA to establish NAAQS for six common air pollutants. These commonly found air pollutants (also known as "criteria" pollutants) are (1) particulate matter ("PM"); (2) ground-level ozone; (3) nitrogen dioxide ("NO_2"); (4) SO_2; (5) lead; and (6) carbon monoxide ("CO"). The EPA calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria (science-based guidelines) for setting permissible levels. The set of limits based on human health is called the primary standard. Another set of limits intended to prevent environmental and property damage is called the secondary standard. Based on information and recommendations supplied by the states, the EPA classifies areas of the country as (i) "attainment" areas (*i.e.*, locations in which air quality is in compliance with NAAQS), and (ii) "non-attainment" areas (*i.e.*, locations where air quality fails to meet the standard for one or more criteria air pollutants). A finding that an area is in non-attainment requires development of a plan, called a Maintenance Plan, to bring the area into compliance with the NAAQS. The CAA

delegates to the states the responsibility for developing and implementing compliance plans. In Kansas, the administering agency is the KDHE.

(1) PM NAAQS

Q: What is the PM NAAQS?

A: The EPA revised the air quality standards for PM in 2006. The 2006 standards tightened the 24-hour fine particulate matter ("$PM_{2.5}$") emission standard from 65 micrograms per cubic meter ("$\mu g/m^3$") to 35 $\mu g/m^3$, and retained the annual fine particulate matter emission standard at 15 $\mu g/m^3$. The EPA retained the existing 24-hour course particle ("PM_{10}") standard of 150 $\mu g/m^3$ but revoked the annual PM_{10} standard. Ambient air particulate particles are currently measured by a state operated monitoring network with monitors across the state. In February 2009, the United States Court of Appeals for the District of Columbia Circuit granted petitions for review of the revised primary and secondary annual fine particulate matter standards and remanded the matter to the EPA for reconsideration. The EPA currently anticipates issuing a revised proposed PM rule in February 2011 and a final rule by October 2011.

Q: Is the Kansas City area currently in attainment of the PM NAAQS?

A: Yes. The Kansas City area is currently in attainment of the 2006 PM NAAQS. No additional environmental controls currently are needed at the La Cygne Generating Station to comply with this standard. It is not yet known whether the Kansas City area will be designated as in attainment of the revised standard set to be proposed and finalized by EPA in 2011.

(2) OZONE NAAQS

Q: What is the Ozone NAAQS?

A: Ground-level ozone is not emitted directly into the air, but is created by chemical reactions between NOx and volatile organic compounds ("VOCs") in the presence of sunlight. Emissions from industrial facilities and electric utilities, motor vehicle exhaust, gasoline vapors, and chemical solvents are some of the major sources of NOx and VOCs. Ground-level ozone is measured at various monitoring stations in and around the Kansas City metropolitan area to determine compliance with this standard. The 1997 primary and secondary standards are identical: an 8-hour standard of 0.08 parts per million ("ppm"). In practice, because of rounding, an area meets the standard if ozone levels are 0.084 ppm or lower.

In March 2008, the EPA significantly strengthened the NAAQS for ground-level ozone. The EPA's final rule revised both ozone standards: the primary standard, designed to protect human health; and the secondary standard, designed to protect welfare (such as vegetation and crops). The EPA set the primary standard to a level of 0.075 ppm. The EPA also strengthened the secondary 8-hour ozone standard to the level of 0.075 ppm making it identical to the revised primary standard.

In January 2010, the EPA proposed to strengthen the 2008 NAAQS for ground-level ozone yet again. The EPA is proposing to strengthen the 8-hour "primary" ozone standard, designed to protect public health, to a level within the range of 0.060-0.070 ppm. The EPA is also proposing to establish a distinct cumulative, seasonal "secondary" standard, designed to protect sensitive vegetation and ecosystems, including forests, parks, wildlife refuges and wilderness areas. The EPA is proposing to set the

level of the secondary standard within the range of 7-15 ppm-hours. The proposed revisions result from a reconsideration of the identical primary and secondary ozone standards set at 0.075 ppm in 2008. The EPA intends to complete this reconsideration of the 2008 ozone NAAQS by July 29, 2011.

Q: Is the Kansas City area currently in attainment of the Ozone NAAQS?

A: Yes. The Kansas City area is currently in attainment of the 1997 Ozone NAAQS; however, there is a recommendation pending at the EPA indicating the Kansas City area should be placed in non-attainment of the 2008 Ozone NAAQS. In addition, until the 2011 Ozone NAAQS is finalized and designations determined, it is unknown if the Kansas City area will be in attainment of the 2011 Ozone NAAQS. Currently, no additional environmental controls are needed at the La Cygne Generating Station to comply with the 1997 Ozone NAAQS, but if additional phases of the 1997 Ozone NAAQS Maintenance Plan are triggered, or if a non-attainment designation of the 2008 or 2011 Ozone NAAQS is determined, additional environmental controls could be required.

Q: Please explain.

A: In June 2007, monitor data indicated that the Kansas City area violated the primary 8-hour 1997 Ozone NAAQS. Missouri and Kansas implemented the Phase 1 responses established in their respective Maintenance Plans for control of ozone. Kansas has not yet implemented Phase 2 of the Maintenance Plan which could require NOx reduction at additional sources yet to be identified. The EPA has various options over and above the implementation of the maintenance plans for control of ozone to address the violation but has not yet acted to impose any additional options.

In 2008, KDHE released a proposed recommendation that the Kansas City area violated the 2008 8-hour Ozone NAAQS based on the 2006-2008 ozone monitoring data. The proposed boundaries for the 8-hour ozone non-attainment areas in Kansas City include the following Kansas counties: Johnson and Wyandotte. KDHE accepted comments on the recommendation, and then submitted its recommendation to the EPA in March 2009. The EPA has not yet acted on KDHE's recommendation as the standards in question are currently under review as noted above. The Kansas City area is considered in attainment unless and until the EPA confirms KDHE's recommendation or a subsequent designation recommendation.

Also in January 2010, the EPA extended the deadline for designating areas as non-attainment under the March 2008 NAAQS for ground-level ozone. Both KDHE and the Missouri Department of Natural Resources ("MDNR") had already proposed Kansas City area counties as non-attainment under the 2008 ozone standard.

(3) NO_2 NAAQS

Q: What is the NO_2 NAAQS?

A: In January 2010, the EPA strengthened the health-based NAAQS for NO_2. The EPA set a new one-hour NO_2 standard at the level of 100 parts per billion ("ppb"). EPA retained, with no change, the current annual average NO_2 standard of 53 ppb. All areas of the country presently meet the current standard. The annual average NO_2 concentrations range from approximately 10-20 ppb across the country.

To determine compliance with the new standard, the EPA is establishing new ambient air monitoring and reporting requirements for NO_2. In urban areas, monitors are required near major roads as well as in other locations where maximum concentrations

are expected. All new NO_2 monitors must begin operating no later than January 2013. These changes will not affect the secondary NO_2 standard, set to protect public welfare. The EPA is considering the need for changes to the secondary standard under a separate review.

Q: Is the Kansas City area currently in attainment of the NO_2 NAAQS?

A: Yes. The Kansas City area is currently in attainment of the NO_2 NAAQS. It is not yet known whether the Kansas City area will be designated as in attainment of the 2010 NO_2 NAAQS revised standard. States are required to submit non-attainment area recommendations for the 2010 NO_2 NAAQS this year. EPA will designate areas as "unclassifiable" until the new ambient air monitoring is full deployed. Currently, no additional environmental controls are needed at the La Cygne Generating Station to comply with this standard.

(4) SO_2 NAAQS

Q: What is the SO_2 NAAQS?

A: In June 2010, the EPA strengthened the primary NAAQS for SO_2. The EPA revised the primary SO_2 standard, designed to protect public health, to 75 ppb measured over one hour. The EPA revoked the two existing primary standards of 140 ppb measured over 24 hours, and 30 ppb measured over an entire year. The EPA is also considering the need for changes to the secondary standard under a separate review.

Q: Is the Kansas City area currently in attainment of the SO_2 NAAQS?

A: Yes. The Kansas City area is currently in attainment of the SO_2 NAAQS. It is not yet known whether the Kansas City area will be designated as in attainment of the 2010 SO_2 NAAQS revised standard; although, the Kansas City area is anticipated to be designated

non-attainment based upon existing monitoring data. States are required to submit non-attainment area recommendations for the 2010 SO_2 NAAQS this year. Currently, no additional environmental controls are needed at the La Cygne Generating Station to comply with this standard, but a future non-attainment designation of the 2010 SO_2 NAAQS could require additional environmental controls.

(5) LEAD NAAQS

Q: What is the Lead NAAQS?

A: In October 2008, the EPA substantially strengthened the NAAQS for lead. The EPA revised the level of the primary standard from 1.5 micrograms per cubic meter ($\mu g/m^3$), to 0.15 $\mu g/m^3$, measured as total suspended particulates. The EPA revised the secondary standard to be identical in all respects to the primary standard.

Q: Is the Kansas City area currently in attainment of the lead NAAQS?

A: Yes. The Kansas City area is currently in attainment of the lead NAAQS based on existing ambient air monitoring. The states are required to install additional ambient air monitoring in the coming years that may impact the attainment status of the Kansas City area. Currently, no additional environmental controls are needed at the La Cygne Generating Station to comply with this standard.

(6) CO NAAQS

Q: What is the CO NAAQS?

A: EPA has proposed and indicated it will finalize a CO NAAQS this year.

Q: Is the Kansas City area currently in attainment of the CO NAAQS?

A: Yes. The Kansas City area is currently in attainment of the CO NAAQS. It is not yet known whether the Kansas City area will be designated as in attainment of the standard

proposed and anticipated to be finalized by EPA in 2011. Currently, no additional environmental controls are needed at the La Cygne Generating Station to comply with this standard.

Q: How does NAAQS affect the La Cygne Generating Station?

A: A finding that an area is in non-attainment requires development of a plan to bring the area into compliance with the NAAQS standards. For the Kansas City areas in Kansas deemed in non-attainment, KDHE has responsibility for development of such a plan. As part of the plan, KDHE may require the installation of emission control equipment on certain power plants such as the La Cygne Generating Station or other emission sources if such equipment is not already in place. Currently, the counties in KCP&L's Kansas and Missouri service territories are all in attainment of the NAAQS. Notably, a violation and non-attainment designation has been recommended regarding ozone, but currently no action has been taken by the EPA.

Q: How does the ozone NAAQS violation affect the La Cygne Generating Station?

A: The Maintenance Plans for the Control of Ozone for the Kansas City area were submitted by KDHE and MDNR and approved by the EPA in July 2007. The plans cover both Missouri and Kansas sources affecting the Kansas City metropolitan area and include contingency control measures that go into effect if associated triggers (such as a violation of the 8-hour ozone standard) occur.

In June 2007, the Kansas City area violated the 8-hour ozone NAAQS. Missouri has implemented the Phase I contingency measures established in its Maintenance Plan for control of ozone. The Phase I trigger required early implementation of Clean Air Interstate Rule ("CAIR") NOx controls at Iatan Unit 1 and the Sibley Station units. The

installation of the NOx controls at these units is complete and the controls are in operation.

If Phase II of the Kansas Maintenance Plan is triggered by continued high ozone values, it would require additional emission controls to be implemented within two years following the end of the ozone season that triggered the Phase II contingency measure. The consequence of the Phase II trigger of the Kansas Maintenance Plan is additional NOx controls at La Cygne Unit 2. Phase II has not yet been triggered.

Q: How does the ozone NAAQS recommended non-attainment designation affect the La Cygne Generating Station?

A: In March 2009, both KDHE and MDNR made non-attainment recommendations for ozone NAAQS for Kansas City metropolitan counties. By 2013, states must submit SIPs outlining how states will reduce ozone to meet the standards in non-attainment areas. In January 2010, the EPA proposed to strengthen the NAAQS for ground-level ozone.

In consideration of the above, the Kansas City metropolitan area is likely to be in non-attainment for ozone within the next few years. In developing compliance plans, the largest emission sources are usually targeted for reductions first because of the economic advantage of such additional emission controls. Therefore, non-attainment will likely make the La Cygne Generating Station subject to more stringent NOx emission requirements. This will likely require the installation of the NOx emission control equipment included as part of the proposed environmental upgrades to the La Cygne Generating Station under consideration in this docket (assuming that at the point attainment/non-attainment status is determined, such equipment is not already completed pursuant to other regulations discussed in this testimony).

C. ACID RAIN PROGRAM

Q: What is the Acid Rain Program?

A: Acid rain occurs when SO_2 and NOx, emissions are transformed in the atmosphere to acids and are returned to the ground in the form of rain and dust. The Acid Rain Program was established in Title IV of the 1990 amendments to the CAA to reduce emissions that cause this phenomenon. Title IV establishes a nationwide cap on electric utility SO_2 emissions, implemented through an emission trading system.

Under this system, the EPA annually assigns a specified number of SO_2 allowances to each emitter that can be used that year or any year thereafter. For each such allowance, the allowance holder has the right to emit one ton of SO_2. Allowances are like land, there is a fixed quantity available, but they are tradable and there is a secondary market for them.

At the end of each year, each emitting unit must have enough allowances to cover its emissions for that year. Operators of units that are anticipated to emit SO_2 in excess of their allowances must acquire additional allowances to meet the excess or pay a penalty to the EPA.

In addition to the cap on SO_2 emissions, the Acid Rain Program requires extensive monitoring and reporting of plant emissions, requires Acid Rain Permits, establishes a system-wide NOx emission rate limit for coal-fired generating units, and requires the installation, operation, calibration, and annual certification of continuous emission monitors.

Q: How does the Acid Rain Program affect the La Cygne Generating Station?

A: The La Cygne Generating Station will need to continue to maintain Acid Rain Program allowances for SO_2 emissions. KCP&L and Westar must each provide sufficient allowances annually for their individual shares of generation from the Station. The environmental control investment under consideration in this docket includes stack monitoring costs required by the Acid Rain Program.

II. OTHER LEGISLATION AND EPA RULEMAKINGS

Q: What other air quality initiatives may ultimately require the proposed emission controls at the KCP&L La Cygne Generating Station?

A: Other proposed legislation or the EPA rulemaking initiatives may ultimately require the proposed emission controls at the La Cygne Generating Station including (1) multi-pollutant legislation, (2) utility Maximum Achievable Control Technology ("MACT") Rule, and (3) the proposed Transport Rule which is designed to replace the CAIR. There are also utility waste regulations that affect the plant.

A. MULTI-POLLUTANT LEGISLATION

Q: What is multi-pollutant legislation?

A: In April 2010, a draft of the Clean Air Act Amendments of 2010 ("CAAA") was circulated for comment. It establishes more stringent SO_2 and NOx caps when compared to the CAIR, including a two-zone program for NOx. It directs the EPA to establish new allowance program rules for auctioning allowances; not allowing use of existing Acid Rain Program allowances for compliance. The draft CAAA directs the EPA to regulate mercury emissions, setting a minimum 90% reduction level starting no later than 2015.

The draft CAAA has been discussed as a potential amendment to climate change legislation.

Q: What is the potential impact of multi-pollutant legislation on the La Cygne Generating Station?

A: The proposed compliance pace and stringency of this draft CAAA reduction program or other similar legislation would be challenging. Zone 2 would include Kansas for the first time in a NOx program. The stringency of the draft CAAA may require the proposed emission controls at the La Cygne Generating Station if the controls are not already completed pursuant to other regulations discussed in this testimony.

B. UTILITY MACT RULE

Q: What is the EPA's proposed utility MACT rule?

A: In December 2000, the EPA announced its finding that it was "appropriate and necessary" to regulate coal- and oil-fired electric utilities under the CAA. This finding, known as the Utility Air Toxics Determination, triggered a requirement for the EPA to propose regulations to control air toxics emissions, including mercury, from these facilities.

In January 2004, the EPA proposed a rule with two basic approaches for controlling mercury from power plants. One approach would require power plants to meet emissions standards reflecting the application of the MACT determined according to the procedure set forth in CAA. A second approach proposed by the EPA would create a market-based cap and trade program.

The January 2004 EPA proposed rule also proposed to revise the EPA's December 2000 finding that it is "appropriate and necessary" to regulate utility hazardous

air emissions using the MACT standards provisions in the CAA. This action would give the EPA the flexibility to consider a more efficient and more cost-effective way to control mercury emissions.

In March 2005, the EPA issued the final Clean Air Mercury Rule ("CAMR"), which builds on the EPA's CAIR to significantly reduce mercury emissions from coal-fired power plants. When fully implemented, these rules would reduce utility emissions of mercury from 48 tons a year to 15 tons, a reduction of nearly 70 percent.

The CAMR established "standards of performance" limiting mercury emissions from new and existing utilities and created a market-based cap-and-trade program that will reduce nationwide utility emissions of mercury in two distinct phases. In the first phase, due by 2010, emissions will be reduced by taking advantage of "co-benefit" reductions – that is, mercury reductions achieved while reducing SO_2 and NOx under the CAIR. In the second phase, due in 2018, utilities will be subject to a second cap, which will reduce emissions to 15 tons upon full implementation.

In May 2006, the EPA issued its determination that regulation of electric utility steam generating units under the CAA was neither necessary nor appropriate.

In February 2008, the United States Court of Appeals for the D.C. Circuit vacated the EPA's rule removing power plants from the CAA list of sources of hazardous air pollutants. At the same time, the court vacated the CAMR. In May 2008, petitions for rehearing of the matter by the full court were denied. In February 2009, an appeal to the Supreme Court was denied.

In December 2008, environmental groups filed a petition asking the D.C. Circuit Court to compel the EPA to promulgate final regulations to regulate hazardous air

pollutants ("HAP") under a MACT standard. In April 2010, in a court-approved settlement agreement, the EPA agreed to develop proposed MACT standards for mercury and potentially other hazardous air pollutant emissions by March 2011 and final standards by November 2011.

Q: What is the potential impact of the EPA's proposed utility MACT rule on the La Cygne Generating Station?

A: A final rule issued by November 2011 will require implementation by about 2015 unless extensions are granted. This will likely include mercury but also could include other HAPs like hydrochloric acid, hydrogen fluoride, etc. The requirements of the final rule may require the proposed emission controls on La Cygne Generating Station if not already completed pursuant to other regulations discussed in this testimony.

C. EPA TRANSPORT RULE

Q: What is the EPA's proposed Transport Rule which is to replace the CAIR rule?

A: In March 2005, the EPA issued the CAIR which did not apply to Kansas. In July 2008, the United States Court of Appeals for the D.C. Circuit vacated CAIR in its entirety and remanded the matter to the EPA to promulgate a new rule consistent with its opinion. The EPA and others sought rehearing of the Court's decision. On December 23, 2008, the Court denied all petitions for rehearing and issued an order remanding the CAIR to the EPA to revise the rule consistent with its July 2008 order instead of vacating the rule.

In July 2010, the EPA proposed the Transport Rule to replace the CAIR. The Transport Rule, like CAIR, will require the states within its scope to reduce power plant SO_2 and NOx emissions that contribute to ozone and fine particle nonattainment in other states. The geographical scope of the Transport Rule is broader than CAIR, and includes

Kansas in addition to Missouri and other states. The Transport Rule also would impose more stringent emissions limitations than CAIR and, unlike CAIR, would not utilize Acid Rain Program allowances for compliance. The EPA is proposing a preferred approach and is taking comment on two alternatives. In the EPA's preferred approach, the EPA would set an emissions budget for each of the affected states and the District of Columbia. The preferred approach would allow limited interstate emissions allowance trading among power plants; however, it would not permit trading of SO_2 allowances between the KCP&L's Kansas and Missouri power plants. In the first alternative, the EPA is proposing to set an emissions budget for each state and allow emissions allowance trading only among power plants within a state. In the second alternative, the EPA is proposing to set an emissions budget for each state, specify the allowable emission limit for each power plant and allow some averaging. Compliance with the Transport Rule would begin in 2012, with additional reductions in SO_2 allowances allocable to the KCP&L's Missouri power plants taking effect in 2014 pursuant to the preferred approach. There is no such additional reduction in SO_2 allowances allocable to the KCP&L's Kansas power plants.

In September 2010, October 2010, and January 2011, the EPA supplemented the record supporting the proposed Transport Rule. The EPA made available additional information relevant to the rulemaking, including, among other things, an updated version of the power sector modeling that the EPA proposes to use to support the final rule and two allowance allocation methods for EPA's preferred approach.

Q: What is the potential impact of the EPA's proposed Transport Rule on La Cygne Generating Station?

A: The proposed Transport Rule is complex and contains alternative approaches. The EPA has indicated they intend to issue the final Transport Rule in mid-2011. KCP&L is unable to predict the actual requirements until the rule is finalized. Preliminary analysis of the Transport Rule has raised various questions regarding the emission allowances allocation to, and the allowable emission rates for, KCP&L's power plants pursuant to the preferred approach and alternatives. KCP&L projects that it may not be allocated sufficient SO_2 or NOx emissions allowances to cover their currently expected operations starting in 2012 pursuant to the preferred approach. Any shortfall in allocated allowances would need to be addressed through permissible allowance trading, installing additional emission control equipment, changes in plant operation, purchasing additional power in the wholesale market, or a combination of these and other alternatives. The requirements of the final rule may require the proposed emission controls on La Cygne Generating Station if not already completed pursuant to other regulations discussed in this testimony.

D. UTILITY WASTE REGULATIONS

Q: How do the utility waste regulations affect the La Cygne Generating Station?

A: KCP&L generates utility "waste" known as coal combustion products ("CCPs") from the generation of electricity. The proposed emission control equipment collects the CCPs. While the regulations define CCPs as waste, many CCPs have beneficial and productive uses.

Q: What is the EPA's proposed coal combustion residuals rule?

A: In May 2010, the EPA proposed to regulate coal combustion residuals ("CCRs") under the Resource Conservation and Recovery Act ("RCRA") to address the risks from the disposal of CCRs generated from the combustion of coal at electric generating facilities. The EPA is considering two options in this proposal. Under the first proposal, the EPA would regulate CCRs as special wastes subject to regulation under subtitle C of RCRA, when they are destined for disposal in landfills or surface impoundments. Under the second proposal, the EPA would regulate disposal of CCRs under subtitle D of RCRA.

Q: What is the potential impact of the EPA's proposed CCRs rule on the La Cygne Generating Station?

A: KCP&L cannot determine the impacts of the EPA's proposed CCRs rule until an option is selected by the EPA and the final regulation is enacted. Both the subtitle C and D regulatory options proposed would require: (i) liner systems for new landfills and surface impoundments; (ii) surface impoundment design, operation, and inspection programs; (iii) location restrictions for disposal facilities; and (iv) groundwater monitoring. Under both options, existing surface impoundments would need to be retrofitted with a liner or close within seven years. To close the surface impoundments would require the conversion from wet handling to dry handling of CCRs for disposal in a dry landfill. Currently, the La Cygne Generating Station Unit 1 scrubber discharges a slurry to a surface impoundment. The requirements of the final rule may require the proposed emission controls, which include dry handling of CCRs from the proposed scrubbers, on the La Cygne Generating Station if not already completed pursuant to other regulations discussed in this testimony.

III. SELECTION OF PROPOSED EMISSION CONTROL EQUIPMENT

Q: What input did you provide in the selection of the proposed emission control equipment for the La Cygne Generating Station?

A: I provided some of the selection decision parameters including existing permit emission limits and conditions. In addition, I provided the emission limits for compliance with the Regional Haze Rule that are documented in our Regional Haze Agreement. I also provided potential emission limits and requirements due to the other rulemakings discussed in this testimony. All of these parameters were inputs into the decision of which control equipment was viable for compliance with the near-term emission requirement along with the ability to potentially comply with reasonably foreseeable future emission requirements.

IV. 492 DOCKET

Q: What EPA and KDHE regulatory programs [current and emerging] apply to the La Cygne Generating Station?

A: In addition to the regulations provided above, the following are some other additional regulatory programs that apply to the La Cygne Generating Station.

Waste Regulatory Programs

- State delegated Resource Conservation and Recovery Act ("RCRA"), 40 CFR Subtitle D, regulates landfills receiving CCPs which are currently considered nonhazardous and pass the EPA guidelines for being nonhazardous.
- The RCRA hazardous waste regulations, 40 CFR 260, regulates hazardous waste disposal.

- The Emergency Planning and Community Right to Know Act ("EPCRA"), 40 CFR 372, is a public awareness program aimed at first responders in emergencies. Regulated chemicals above threshold amounts kept on site are annually submitted to the state regulators and to the emergency response groups that would respond to a specific location.

Air Regulatory Programs

- Compliance Assurance Monitoring, 40 CFR 64, requires additional monitoring of pollution control equipment operating parameters to ensure continuous compliance with pollutant-specific emission limits.
- Chemical Accident Prevention Provisions, 40 CFR 68, is applicable to an owner or operator of a stationary source that has more than a threshold quantity of a regulated substance in a process. Part 68 sets forth the list of regulated substances and thresholds and the requirements for owners or operators of stationary sources concerning the prevention of accidental releases.
- State Operating Permit Programs, 40 CFR 70, requires all facilities with an annual potential to emit above certain thresholds to obtain a state operating permit. Part 70 operating permits contain all of the applicable air quality requirements (both state and federal) for a particular facility and must be revised as necessary and renewed every five years.
- Protection of Stratospheric Ozone, 40 CFR 82, regulates certain controlled substances including chlorofluorocarbons ("CFCs"), hydrochlorofluorocarbon ("HCFC") refrigerants, halons, carbon tetrachloride, and methyl chloroform.

Part 82 requires recordkeeping of maintenance and calculation of leak rates for CFC and HCFC-containing equipment.

- Mandatory Reporting of Greenhouse Gases, 40 CFR 98, requires tracking and annual reporting of various greenhouse gases ("GHG"). Beginning with emissions occurring in 2010, all facilities required to report carbon dioxide ("CO_2") under the Acid Rain Program as well as other facilities with actual CO_2 equivalent (CO_2e) emissions above 25,000 tons per year must report their annual GHG emissions.
- The Industrial Boiler MACT, a subpart of 40 CFR 63, will regulate emissions of HAP from non-electric generating boilers such as auxiliary or steam boilers. It will affect all industrial boilers, regardless of installation or construction date.
- New Source Review ("NSR"), 40 CFR 52.21, now requires new and modified sources of GHG to undergo Prevention of Significant Deterioration ("PSD") construction permitting for GHG in addition to the other NSR regulated pollutants. PSD permitting includes an evaluation of the best available control technology for GHG emissions.
- New Source Performance Standards ("NSPS"), Clean Air Act Section 111(b) and (d), are emission requirements for new, modified, and existing electrical generating units. EPA has entered into a settlement agreement to revise the existing standards and develop new standards which will include GHG emissions for the first time.

Water Regulatory Programs

- Oil Pollution Prevention, 40 CFR 112, establishes procedures, methods, equipment, and other requirements to prevent the discharge of oil from non-transportation-related onshore facilities into or upon the navigable waters of the United States. Requires facilities with an oil storage capacity of 1,320 gallons or more to prepare and implement a Spill Prevention, Control, and Countermeasure ("SPCC") Plan. In addition, facilities with an oil storage capacity of 1 million gallons or more are required to prepare and implement a Facility Response Plan.
- EPA Administered Permit Programs: The National Pollutant Discharge Elimination System, 40 CFR 122, implements the National Pollutant Discharge Elimination System ("NPDES") Program. Any person who discharges or proposes to discharge pollutants except persons covered by general permits must comply.
- Criteria and Standards for the National Pollutant Discharge Elimination System, 40 CFR 125, establishes criteria and standards for the imposition of technology-based treatment requirements in permits under section 301(b) of the Act, including the application of EPA promulgated effluent limitations and case-by-case determinations of effluent limitations under section 402(a)(1) of the Act. 40 CFR 125.90 establishes requirements that apply to the location, design, construction, and capacity of cooling water intake structures at existing facilities that are subject to this subpart (*i.e.*, Phase II existing facilities). The purpose of these requirements is to establish the best technology available for minimizing

adverse environmental impact associated with the use of cooling water intake structures. EPA will soon be proposing regulations for existing facilities.

- Water Quality Standards, 40 CFR 131, describes the requirements and procedures for developing, reviewing, revising, and approving water quality standards by the states as authorized by section 303(c) of the Clean Water Act. Compliance with these standards is incorporated into NPDES Permits.
- Steam Electric Power Generating Point Source Category, 40 CFR 423, establishes provisions applicable to discharges resulting from the operation of a generating unit by a facility primarily engaged in the generation of electricity for distribution and sale which results primarily from a process utilizing fossil-type fuel (coal, oil, or gas) or nuclear fuel in conjunction with a thermal cycle employing the steam water system as the thermodynamic medium. 40 CFR 423.12 establishes effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available. EPA is reviewing these effluent guidelines and plans to update soon.

Q: What are the emission allowances for La Cygne Units 1 and 2?

A: La Cygne Generating Station Units 1 and 2 receive an allocation of SO_2 allowances each year pursuant to the Acid Rain Program. Unit 1 received 14,405 and Unit 2 received 15,087 annual SO_2 allowances under the Acid Rain Program for 2010. In addition, annual allowances are withheld from each facility for purpose of the EPA annual auction held each year in March. The proceeds from the sale of these allowances at auction, or any allowances not sold are returned to each facility. In 2010, the withheld annual SO_2

allowances for both Units were not returned but the Units received the proceeds from the sale.

Q: Does that conclude your testimony?

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 PAUL LING

STATE OF MISSOURI)
) **ss**
COUNTY OF JACKSON)

Paul Ling, being first duly sworn on his oath, states:

1. My name is Paul Ling. I work in Kansas City, Missouri, and I am employed by Kansas City Power & Light Company as Manager of Environmental Services.

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 thirty (30) 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.

Paul Ling

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

Notary Public

My commission expires: May 23, 2014

DONNA J. STOWAY
Notary Public, Notary Seal
State of Missouri
Clay County
Commission # 10889620
My Commission Expires May 23, 2014