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Witness: John R. Grimwade
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Sponsoring Party: Kansas City Power & Light Company
Case No.: EO-2005-0329
Date Testimony Prepared: April 11, 2005

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. EO-2005-0329

DIRECT TESTIMONY

OF

JOHN R. GRIMWADE

ON BEHALF OF

KANSAS CITY POWER & LIGHT COMPANY

Kansas City, Missouri
April 2005

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of a Proposed Experimental Regulatory Plan of Kansas City Power & Light Company	)))	Case No. EO-2005-0329

AFFIDAVIT OF JOHN R. GRIMWADE

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

John R. Grimwade, being first duly sworn on his oath, states:

1. My name is John R. Grimwade. I work in Kansas City, Missouri, and I am employed by Kansas City Power & Light Company as Manager of Energy Resource Management.

2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of Kansas City Power & Light Company consisting of nineteen (19) 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 thereto, are true and accurate to the best of my knowledge, information and belief.

John R. Grimwade

Subscribed and sworn before me this 11th day of April 2005.

Notary Public

My commission expires: _____

CAROL SIVILS
NOTARY SEAL
NOTARY PUBLIC
STATE OF MISSOURI

CAROL SIVILS
Notary Public - Notary Seal
STATE OF MISSOURI
Clay County
My Commission Expires: June 15, 2007

DIRECT TESTIMONY

OF

JOHN R. GRIMWADE

Case No. EO-2005-0329

Q: Please state your name and business address.

A: My name is John R. Grimwade. My business address is 1201 Walnut, Kansas City, Missouri 64106.

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

A: I am employed by Kansas City Power & Light Company ("KCPL") as Manager of Energy Resource Management.

Q. What are your responsibilities?

A. My responsibilities include long term integrated resource planning, the development of new generation resources, market price forecasting, structuring firm wholesale sales and purchases and energy portfolio risk management.

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

A. I graduated from Worcester Polytechnic Institute in 1979 with a Bachelor of Science degree in Mechanical Engineering, and in 1988 I received my M.B.A. from Rockhurst College, Kansas City, Missouri. I was first employed at KCPL in 1987 as a Grade II Engineer in the Power Engineering Division. In 1990, I transferred to the Generation Planning Department as a Generation Planning Engineer. In 1996, I moved to KCPL's non-regulated affiliate KLT Power as a Project Manager for China Development, and in 1997 I became a Developer for U.S. Business Development. When KCPL sold KLT

Power in 1998, I returned to KCPL as Supervisor Resource Planning and Development. In 1999 I was promoted to my present position. Prior to joining KCPL, I worked for The Babcock & Wilcox Company during the period from 1979 to 1987, first as a Field Service Engineer, then as a Sales Engineer.

Q. Have you previously testified in a proceeding at the Missouri Public Service Commission or before any other utility regulatory agency?

A. I have previously testified before both the Missouri Public Service Commission ("MPSC") and the Kansas Corporation Commission ("KCC") on numerous issues regarding integrated resource planning and generation plant siting.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to provide and sponsor supporting technical documentation regarding KCPL's Integrated Resource Planning ("IRP") process and proposed Comprehensive Resource Plan.

Q. Can you please provide an overview of the IRP process and the results of KCPL's IRP process?

A. KCPL has been conducting IRP for many years as a means for identifying demand and supply resources that best meet the long-term needs of its customers. Four such long-term plans were done between 1981 through 1991, which assessed resource alternatives over a 20 year planning horizon. Each plan was submitted to the MPSC and KCC for informational purposes. In 1994, KCPL conducted its first formal IRP called "KCPLan 94" in accordance with formal IRP requirements set forth in 4 C.S.R. § 240-22.010 *et al.* The process involved several distinct areas including a forecast of future demand and energy requirements, an assessment of supply-side resource alternatives, an

assessment of demand-side resources, an analysis that integrated the supply and demand-side alternatives into alternative strategies, an assessment of the risks associated with each of the alternative strategies, the selection of a preferred strategy and the adoption of an implementation plan for executing the preferred strategy. The results of KCPLan 94 indicated a preferred strategy for the period 1994 – 2014 that included 1479 MW of new peaking capacity primarily to meet increasing demand and expiring purchased power contracts, 160 MW of new combined cycle generation in 2005 and 250 MW of additional coal-fired generation in 2010. Following the filing of IRPs by all of Missouri's regulated public utilities, the formal IRP requirements were waived with the approval of the MPSC, and electric utilities were permitted to conduct semi-annual meetings with MPSC Staff and the Office of Public Counsel ("OPC") to discuss IRP resource requirements and plans for meeting future resource needs. Since the filing of KCPLan 94, KCPL has continued with its IRP processes and has conducted various Needs Assessments to address specific resource decisions for meeting near term generation needs. Needs assessments have included a 1995 Wind assessment, the decision to install Hawthorn 6 CT, Hawthorn 7 & 8 CTs, the Hawthorn 9 repowering of Hawthorn 6 and 4 steam turbine to a combined cycle unit, the decision to replace Hawthorn 5 with a coal unit, the decision to install CTs at West Gardner and Osawatomie and several short term purchase power capacity contracts.

Q. Were you specifically involved in the KCPLan 94 IRP process?

A. Yes. I was principally responsible for the supply-side analysis, integration analysis of the supply and demand alternatives and a portion of the risk assessment.

Q. Please describe KCPL's recent resource planning process conducted as part of KCPL's Strategic Planning Process during 2004 and informal discussions with MPSC Staff and OPC?

A. KCPL began its recent IRP process in 2003 to address resource requirements for the period 2005 – 2010 that were driven by increasing demand and the expiration of several large purchase power contracts. In addition, we wanted to assess the impacts of several major drivers including volatile natural gas markets and the impact resulting from more stringent environmental regulation for our existing units. We engaged in discussions with the MPSC Staff and OPC early on in our planning process in early 2004. Preliminary results of the IRP process were presented to MPSC Staff and OPC in two separate presentations dated May 12, 2004 and May 27, 2004. The preliminary results indicated that a 500 MW share of a new coal unit located at KCPL's Iatan site provided the best alternative to meeting KCPL's long-term baseload needs. The preliminary results also indicated that a balance of wind resources in the 2006 – 2008 timeframe would provide mitigation against the potential of mandated renewable generation, green house gas legislation imposing reduction of carbon dioxide emissions and increasing natural gas prices. Because of the need to address a broad set of issues KCPL proposed to utilize an open collaborative process in a workshop environment that would allow a number of interested parties to come together in a collaborative set of workshops to discuss the preferred method for meeting the region's future energy needs.

Q. Do you believe that the informal collaborative process was more beneficial than the traditional formal IRP process followed in 1994?

A. Yes. The workshops allowed many interested parties to come together and discuss their respective interests and concerns. KCPL was able to better understand the importance of issues such as energy efficiency and affordability programs and how the parties can work together in the future to better design these programs, the interests in using technology to improve the environmental emissions on our existing plants and the role that renewable resources such as wind could play in a balanced portfolio of resource alternatives. I believe we were better able to explain our reasons why pulverized coal was necessary for providing a stable and reliable electric supply and our concern for over-reliance on natural gas as an energy resource in the future. We were also able to better explain the complex set of current and possible future environmental regulations that would impact our existing generating units. We were also able to discuss why Integrated Gasification Combined Cycle technology is not a viable technology for KCPL to consider for its next base load generating resource. We found during the preparation of KCPLan 94 that there was limited interaction with other interested stakeholders. Having experienced both processes, I would say that by working through the issues in a collaborative process, the proposed Comprehensive Plan is much broader in scope and more balanced than what we would have achieved using the formal process.

Q. Please describe IRP models including the MIDAS model.

A. An IRP model is a comprehensive decision support tool that allows for the assessment of multiple scenarios of supply and demand resources and incorporates a wide range of uncertainty for evaluating risk. The model provides a means to simulate hourly

operational results of generation, transmission, distribution and final use of electricity including demand-side management. The model consolidates the financial results of operations with the operating and capital budgets, financing needs and ratemaking considerations to arrive at integrated financial projections of business results. The model replicates the existing infrastructure including generating resources, transmission constraints, hourly system loads, operating and capital budgets, financing, and ratemaking constructs. The model data base consists of publicly available data regarding existing generation capacity, the cost of generation, transmission capabilities and constraints and regional loads, as well as internal confidential information regarding operating and capital budgets and other financial and operational information specific to KCPL's system. Users can simulate changes in the existing infrastructure to view the economic impact of various alternative resource additions, the impact of changing fuel price or changing load, environmental regulations, and other key inputs. KCPL utilizes the MIDAS™ model suite for IRP evaluations. MIDAS™ is a state of the art, integrated system dispatch model and financial model used for forecasting, budgeting and resource planning. This model allows the user to input a range of expected costs for key drivers such as fuel price, unit operating costs, construction costs, system load growth, etc. We may have a natural gas forecast of $6/mcf, but we can also input a range of expected costs from $3/mcf to $9/mcf, for example. The model then utilizes stochastic simulations to provide a range of expected results for various alternative resource plans and various future states for key drivers. The model then provides a range of expected results for each alternative resource plan. Key results can include cash flow, net income, revenue requirements, average system rates and other results.

Q. What is the current state of KCPL's generating capacity needs over the next several years?

A. With no changes to existing generation and no additional demand side management, based on a 12% capacity margin and a projected peak load of 3,959 MW, KCPL will have a capacity shortfall of 431 MW in 2010.

Q. Based on KCPL's most recent IRP analysis, what type of resources are needed and when are these resources needed?

A. KCPL's resource planning process identified a variety of resource requirements for new generation, demand reductions and modifications to our existing units to meet the changing needs and concerns of regulatory agencies and our customers. The primary capacity need is for large base load capacity in the 2010 timeframe. In addition, with 20 states already implementing Renewable Portfolio Standards ("RPS") and with increased concerns over carbon dioxide emissions as well as other emissions, the addition of renewable generating capability was determined to be a balanced approach to mitigating these concerns as well as provide an opportunity for KCPL to learn from having renewables in our portfolio. 100 MW of wind generation is recommended as early as the 2006 timeframe to potentially take advantage of production tax credits ("PTC") that we anticipate will be renewed for renewable generation. The resource planning process and subsequent workshops also included a plan to pursue and evaluate the economic impact of demand side management and energy efficiency technologies.

Q. How was the MIDAS model utilized in the IRP process?

A. The MIDAS model was utilized for two main purposes – (1) Modeling regional energy market price forecasts and (2) Simulating the impact of the regional energy market on the

specific resource addition decisions made by KCPL. The product of the results of these two modeling steps is a case that combines the external business environment or scenario, with internal KCPL actions or strategy. The metric utilized for comparisons of the various cases and scenarios was the Present Value of Revenue Requirements ("PVRR") computed over the twenty-year planning horizon. PVRR represents the total cost in current dollars to the ratepayers over the planning timeframe, thus a lower PVRR would indicate a lower customer cost and a preferred alternative. MIDAS market price issues were presented in KCPL's presentation to the MPSC on October 22, 2004 titled MIDAS Summary of Fuel and Interchange Budget Drivers. The PVRR results for key scenarios were shown in KCPL's IRP review presented to the MPSC and the OPC on May 12, 2004.

Q. What resource addition strategies were assessed through the MIDAS modeling?

A. Three main resource addition strategies, derived through a screening process that looked at a wide range of alternatives, were assessed to meet capacity need over the next several years. One strategy was to add gas-fired combustion turbines as needed to meet capacity needs. A second approach to meet this need was the addition of a gas-fired combined cycle unit. The third approach to meet this need was the addition of a pulverized coal-fired generating unit. For the Combined Cycle and Pulverized Coal addition approaches, various in-service years of the units were assessed. In addition, variations of these cases were run including the addition of wind generation resources.

Q. What uncertainties were considered in completing the evaluations of these resource addition strategies?

A. The following uncertainties were considered in forecasting market prices: Natural gas prices, load growth rates, environmental regulations including emissions limitations and emission allowance prices, regulation of carbon dioxide emissions, and transmission constraints. These modeling scenarios generated market price forecasts reflecting the impacts of each of these uncertainties. In the assessment of the resource additions, the underlying assumptions for the market price uncertainties were incorporated into the modeling of KCPL's financial results. That is, in the assessment of the impact of high natural gas prices on the resource decisions, the market price forecasts generated by MIDAS under the high gas price scenario were utilized in the financial modeling assessment of the resource addition strategies. In addition, the high natural gas price forecast was assumed for the operation of KCPL's gas-fired generation.

Q. What were the results of the assessment of the resource addition strategies?

A. Under base case assumptions, the addition of a 500 MW share of a pulverized coal-fired generating unit resulted in the lowest PVRR. Furthermore, the modeling showed that the optimal timing of this addition would be during the 2010 to 2012 timeframe. These findings were included in KCPL's first and second IRP reviews presented to the MPSC and the OPC on May 12, 2004 and May 27, 2004, respectively.

Q. What was the impact of natural gas price uncertainty on this assessment?

A. The resource decision was shown to be highly sensitive to natural gas prices. Under the high natural gas price assumptions, the coal addition strategy reflected a much lower PVRR than either of the natural gas-fired generation plans, either Combustion turbines or Combine Cycle. In addition, the optimal timing of this coal addition was shifted forward in time, with optimal timing to be as early as the unit could possibly be built in the 2009

to 2010 timeframe. In the low gas price scenarios, gas-fired generation was the preferred alternatives. However, the unfavorable differences between the coal resource addition plan and the gas-fired alternatives were not as large as the favorable differences in the high gas price scenario. Furthermore, since this planning effort was performed in mid-2004, current projections for natural gas prices would appear to be even less probable to be at the low forecasted range used in the analysis.

Q. What was the result of the load growth uncertainty?

A. The load growth uncertainty did not change the decision of the preferred resource addition strategy, that is, the preference for the coal addition plan did not change in either a high or low load growth scenario. However, this uncertainty did influence the optimal timing of the coal addition. In the high load growth scenario, the optimal time for the coal addition was in 2010. In the low load growth scenario, the optimal time for the addition was 2013.

Q. Were uncertainties in environmental regulation modeled in the analysis?

A. Environmental uncertainties were modeled as a combination of both emissions limitations and emission allowances prices. Under either the high or low environmental regulations scenarios, the coal addition strategy remains the preferred addition strategy. Details of KCPL's environmental considerations were provided in early December 2004 under Appendix C of KCPL's response to MPSC Data Request # 1029.

Q. How did the addition of wind affect the resource decision?

A. The addition of wind generating resources did not change the preferred resource addition strategy. The coal additions with wind were preferred over either combustion turbines with wind or combined cycle with wind. Furthermore, the optimal timing of the coal

addition was not significantly impacted by the addition of wind generation, and the optimal time for the coal addition remained to be in the 2010 to 2012 time frame. The addition of wind generation did not change the decision under a high natural gas price scenario.

Q. How did the capital cost uncertainty of the coal resource addition impact the assessment?

A. Even under a high capital cost estimate for the coal plant addition, the coal strategy maintained its competitive advantage over the gas-fired addition plans.

Q. How would the imposition of legislation requiring carbon dioxide reductions impact the resource addition decision?

A. Under the base natural gas price assumption, the imposition of the more stringent carbon dioxide reductions would increase the PVRR of the coal addition strategy to the point where the coal-fired alternative would be less favored than the natural gas-fired alternatives. Under this scenario, the combustion turbine addition plan would be the favored alternative. However, if carbon dioxide reductions would be mandated, we would expect to see an increased demand for natural gas-fired generation on a region wide basis to make up for the loss of coal-fired generation. Thus, the expected scenario with stringent carbon dioxide reductions would include expected high natural gas prices due to this increased demand. Under a high natural gas price scenario with carbon dioxide reductions, the analysis indicated that the coal addition strategy would be the preferred alternative. The impact of carbon dioxide reductions on the PVRR results of resource addition scenarios were included in KCPL's IRP review presented to the MPSC and the OPC on May 12, 2004.

Q. How would transmission constraints impact the decision?

A. Increased transmission constraints between KCPL and the wholesale market would increase the PVRR for each of the resource addition strategies because KCPL would have reduced capability to market power where our generation was lower cost than the region, or would have less access to the purchase power where the market price was lower than our generation cost. This reduced access would impact the coal addition scenario more than the gas-fired generation alternatives. However, the analysis indicates that the coal addition strategy is still the favored alternative under this reduced transmission scenario.

Q. Please describe your analysis regarding wind generation.

A. Wind generation was modeled using actual meteorological data obtained from prospective wind farms under development. Seasonal load shapes were used to simulate the hourly and seasonal variability of the wind resource. The sensitivity around the availability of a PTC was modeled assuming both a PTC and no PTC for the wind generation. We found that wind generation under current environmental regulations without the support of the PTC or other federal or state subsidy is not cost competitive with other traditional forms of base load generation. However, where the PTC is extended through the end of 2006, the resource plan including wind generation had a slightly lower overall cost than a plan without wind. If the credit was extended through 2008, the wind plan was more cost competitive. Thus, the PTC is a key for making wind be cost competitive with other base load generation. However, when taking into consideration the high probability of more stringent environmental regulations for coal-fired generation and the passage of imposed mandates for renewable energy, the inclusion of wind generation in a balanced portfolio provides mitigation for each of the

above mentioned risks, which will ultimately yield lower costs for consumers. The addition of wind generation was found to be strongly supported by many of the participants in the workshop process including the Missouri Department of Natural Resources ("MDNR"). While not the lowest cost resource, wind provides the ability for KCPL to balance the interests of multiple stakeholders by providing a robust set of resource alternatives that over all scenarios minimizes cost to customers, maintains a high degree of reliability and is responsible to the environment. KCPL's analysis was summarized in Appendix E of the response to questions presented to KCPL at the October 29, 2004 workshop, referenced under KCPL's response to MPSC Data Request No. 1029.

Q. Did KCPL consider Integrated Coal Gasification Combined Cycle technology ("IGCC") to meet capacity and energy needs instead of building a traditional pulverized coal unit?

A. Yes, we did.

Q. What did your analysis indicate regarding IGCC?

A. KCPL has been following a number of developing technologies including IGCC. What we found in our analysis is that IGCC is not currently a commercially available technology. There are very few operating IGCC units in the world and none have been developed above 300 MW. Current proposed IGCC development has been primarily sponsored by funding from the U.S. Department of Energy in research and development pilots. There are no established manufacturers specializing in the commercial manufacture of the required equipment and no architect/engineering firms or construction firms with experience in designing or constructing large-scale IGCC units. There are

significant hurdles to developing larger and more economic IGCC units including identification of the optimal economic design, determining proper material applications and developing economic construction methods. In addition, significant efforts are required to identify and eliminate high cost operating issues and improving overall unit availabilities. The cost of an IGCC unit is projected to be 20%-30% higher than the cost of a similar sized pulverized coal unit. For the few operating IGCC units worldwide, there are availability concerns surrounding the gasifier. Refractory life inside the gasifier is an on-going concern, which contributes to uncertainty regarding future operating costs and availability. While we view IGCC development as potentially promising new technology it certainly is not a commercially viable option for consideration for addressing near term base load requirements. Details of KCPL's analysis were included in Appendix B of our response to MPSC Data Request No. 1029.

Q. Did KCPL consider demand-side management as an alternative to installing new generating resources?

A. Yes, we did.

Q. What did your evaluation indicate regarding demand side management as a replacement for generating resources?

A. There are numerous technologies and programs, which can impact end-user consumption of electricity. There are many uncertainties associated with each program and each technology. The primary uncertainties include customer acceptance and participation levels, the actual level of demand reduction that can be realized, and ultimately, the overall economic impact on ratepayers. Our evaluation indicated that a 5-year program, based on a 3-year pilot, was the preferred implementation. The pilot program provides

the opportunity to work collaboratively with interested parties to explore several of the most promising programs, to monitor the results of each program or technology in order to clarify many of the uncertainties and to identify the most economic and consumer acceptable programs. Based on the results of the pilot, we expect to reevaluate results and make a recommendation regarding continued penetration of the most promising and economic demand-side applications. Details of KCPL's demand-side management findings were included in Appendix A of KCPL's response to MPSC Data Request No. 1029.

Q. Other than pulverized coal, wind, IGCC and demand-side management, what other technologies did KCPL consider to meet capacity and energy needs and what were the results of your analysis of these technologies?

A. We completed pre-screening evaluations of Nuclear, Combined Cycle, Combustion Turbine, Circulating Fluidized Bed, Distributed Generation, Solar, Fuel Cells, Biomass, and Energy Storage technologies. Pre-screening focused on installed & operating costs, fuel price and fuel availability, reliability and availability, environmental issues, industry experience, scalability, and the ability to permit and operate the technology. Nuclear technology was rejected in the pre-screening largely based on its high installed cost, the lengthy and costly permitting process, a lack of long-term spent fuel storage, and the lack of design and regulatory standards. Combined Cycle and Combustion Turbine technologies passed the pre-screening and were included for more detailed evaluations. Circulating Fluidized Bed ("CFB") technology was rejected in the pre-screening process due to its high costs and the small scale of existing units—the vast majority of these units are in the scale of 50-165 MW. CFB technology also is better suited for regions that have

abundant supplies of low quality coal or coal waste products. Distributed Generation ("DG") was also rejected for large-scale application. However, DG was retained for use in demand-side programs. The design of KCPL's transmission and distribution systems provides the potential for only minor savings from avoided future investment in this infrastructure. The few locations identified for potential savings also yielded only temporary delays in planned future system improvements. The primary source of DG technology is small-scale natural gas fired or high cost renewable generating units, such as fuel cells and solar generation. These units are costly to install and operate and are not competitive with the other technologies we evaluated. Energy storage systems require either high cost battery systems or proper geologic formations to store compressed air. This proved to be a high cost alternative with little benefit to KCPL or our ratepayers. Fuel Cells were among the most costly alternatives evaluated, there is little manufacturing or operating experience and the scale of existing operating units is too small to meet KCPL's capacity needs. The renewable alternatives, Solar and Biomass, were not competitive with the Wind alternative. Solar has a high installed cost, limited commercially available scale, and is not competitive in our region's climate. Biomass is available in two general categories. First, small scale 100% bio-fueled units, and second in larger scale units that co-fire up to 10-15% bio-fuel with other traditional fossil fuels. In both cases, the installed costs and operating costs are significantly higher than the alternatives passing the pre-screening. In addition, there is limited industry experience. Finally, there are significant uncertainties concerning the long-term cost and ability to provide a reliable around the clock supply of biomass fuel.

Q. What is the estimated capital investment for the proposed resource and environmental additions?

A. Iatan unit 2 is expected to cost $776 million for a 500 MW share. Wind generation is currently budgeted to cost $131 million for a 100MW site. Environmental investment is budgeted at $272 million through 2010. The Demand Side Management and Energy Efficiency pilot is budgeted to cost $52.8 million. These estimates are on a total company basis.

Q. How and why were the proposed environmental retrofits selected for existing coal-fired generating units?

A. The primary driver for recommending environmental retrofits on our existing units was the expectation that either new EPA emissions regulations or some form of Clear Skies legislation would be adopted. These regulatory and legislative initiatives would place tighter restrictions on emissions of nitrous oxides, sulfur dioxides, Particulates and Mercury emissions. The technology selections of Selective Catalytic Reduction ("SCR") for nitrous oxides control and baghouses for particulate control were primarily based on their proven effectiveness and industry-wide acceptance as well as our experience with operating these technologies on our Hawthorn unit 5. For sulfur dioxide removal, Burns & McDonnell provided an economic comparison of wet versus dry scrubber installations. Based on the results of their findings and superior sulfur dioxide and mercury removal, wet scrubbers were recommended. The timing of other retrofits was determined based on several drivers. Iatan unit 1 represents the largest potential decrease in emissions for KCPL and was therefore selected as the first site. The same logic was followed to select LaCygne unit 1 and the LaCygne unit 2 respectively as the next units for new

environmental controls. Specific timing for each unit was designed to coincide with planned outages to minimize unit downtime for the required change over of environmental controls. An additional driver was concern over the availability of skilled construction labor and equipment manufacturing capacity. These concerns indicated that spreading installations over several years would provide improved certainty over the availability of the needed equipment and manpower. Finally, due to resource constraints and the long-term nature of this construction, it was determined that some retrofits would need to be completed prior to the effective date of new emissions limitations. Details of KCPL's evaluation and recommendations were presented in Appendix C of KCPL's response to MPSC Data Request No. 1029.

Q. In the final version of the Clean Air Interstate Rule ("CAIR"), Kansas was excluded from the list of states required to comply with the rule. Does this change your environmental retrofit recommendations?

A. No. We do not anticipate major changes to our proposed environmental investment as a result of the final rulemaking. As I stated earlier, there are a number of factors that are driving the decision to install environmental retrofits on our units and the CAIR is only one of several current and proposed regulations that affect the LaCygne station. Kansas is included in the EPA's Mercury Rule, also released on March 15, 2005. The same equipment proposed in our "Comprehensive Plan" is expected to be required to reduce mercury emissions. The need to address Kansas City Non-attainment of the 8-hour ozone standard, best available retrofit technology ("BART") regulations and new source review are also factors effecting our decision.

Q. Please provide support for the in-service criteria contained in Appendix H-1 of the Stipulation and Agreement?

A. The In-Service Criteria included in Appendix H-1 of the Stipulation and Agreement were developed collaboratively between KCPL and the Staff of the MPSC. The intent of the In-Service Criteria is to ensure that any new generating resource or major environmental retrofit anticipated in the Plan passes a series of tests that define that the equipment has been designed properly, and meets certain operating criteria before it will be considered "used and useful" and in-service for the benefit of serving ratepayers. The criteria were established for new coal, wind, combustion turbine, combined cycle and environmental additions. The criteria require that specific minimum standards are met including unit performance, operability, reliability and environmental emissions removal capability.

Q. Does that conclude your testimony?

A. Yes, it does.