Exhibit No.:
Issue: Transmission Asset Management Plan
Witness: Richard A. Spring
Type of Exhibit: Direct Testimony
Sponsoring Party: Kansas City Power & Light Company
Case No.: ER-2007-___
Date Testimony Prepared: January 31, 2007

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO.: ER-2007-___

DIRECT TESTIMONY

OF

RICHARD A. SPRING

ON BEHALF OF

KANSAS CITY POWER & LIGHT COMPANY

Kansas City, Missouri
January 2007

DIRECT TESTIMONY

OF

RICHARD A. SPRING

Case No. ER-2007-____

Q: Please state your name and business address.

A: My name is Richard A. Spring. 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 Vice President, Transmission Services.

Q: What are your responsibilities?

A: My responsibilities include overseeing KCPL's transmission planning, transmission system operations, substation & transmission engineering, transmission construction & maintenance, substation construction & maintenance, and system protection.

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

A: I hold a Master of Business Administration from Rockhurst College, a Bachelor of Science in Mechanical Engineering from Wichita State University and an Associates of Arts degree from Butler County Community College. I began my career at Kansas City Power & Light ("KCPL") in 1978 as a Staff Maintenance Engineer, promoted to Operations Supervisor in 1979, Maintenance Superintendent 1982, all at the La Cygne Generating Station. I then moved to the Iatan Generating Station as Maintenance Superintendent where I was promoted to Plant Manager in 1984. I returned to the La Cygne Generating Station in 1991 as Plant Manager. In 1993, I joined Northern

Indiana Public Service Company as Director of Electric Production. I returned to KCPL in 1994 as Vice President, Production. I shifted responsibilities and was named Vice President Transmission Services in 1999.

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").

Q: What is the purpose of your testimony?

A: The purpose of my testimony is to summarize the goals and objectives of KCPL's Asset Management Plan (or the "Plan") for KCPL's transmission and substation assets. I will provide an update detailing what steps have been implemented within the Plan and discuss some specific elements including capital budget requirements to support the Plan. I will also explain KCPL's membership commitments to the Southwest Power Pool ("SPP").

Q: What are the goals and objectives of the Asset Management Plan for the transmission and substation areas?

A: Asset Management at KCPL is the structured and disciplined process to develop the program of work for system expansion, system improvements, and maintenance (both corrective and preventive). For KCPL's transmission and substation assets, our objective is to provide a scope of work that achieves four key strategic goals while at the same time minimizing costs: (i) Minimize forced transmission line outages per hundred mile year ("FOHMY"); (ii) Minimize the System Average Interruption Duration Index ("SAIDI") as it relates to the duration and frequency of outages to our customers; (iii) Maximize

transmission system availability and (iv) Compliance with all requirements of the North American Electric Reliability Council ("NERC") and Southwest Power Pool ("SPP") reliability standards governing the operation of the bulk-power system.

Through Asset Management, and as a result of implementing the Plan, we expect to maintain Tier 1 service reliability levels to our customers while consistently optimizing the operations, planning, construction and maintenance strategies of KCPL's transmission and substation assets. Details set forth within the Plan provide for vital maintenance, inspection and testing programs of all major components addressing the replacement of aging transmission and substation infrastructure.

I emphasize that our fourth strategic goal related to meeting bulk-power system reliability criteria is critical in our strategy going forward. Due to the recent formation of the Electric Reliability Organization ("ERO") implemented by the Federal Energy Regulatory Commission ("FERC") as a result of the provisions of the 2005 Energy Policy Act, KCPL must meet requirements of a growing set of bulk-power reliability standards that are now mandatory and enforceable by FERC. Executing various key strategic transmission and substation asset management plans will ensure that KCPL fulfills each reliability standard and, therefore, remains compliant with the standards.

Q: What are the specific elements of the Asset Management Plan?

A: KCPL's Asset Management Plan for transmission and substation assets outline key initiatives that will provide maximum benefits to meeting the four strategic goals I outlined in the previous question. Each initiative and activity serves to reach our goals while maximizing benefits and minimizing costs.

In some aspects, the transmission and distribution assets have common maintenance requirements due to similar components such as wood pole structures, insulators, exposed conductor wire, enclosed metal-clad switchgears, etc. While other elements in the transmission system have unique maintenance characteristics such as automated relay monitoring and protection schemes, large-scale substation equipment such as 50MVA transformers and high voltage breakers requiring unique treatment. Each set of transmission elements requires appropriate asset management treatments to maintain critical operating functions, maximize life expectancy and address asset obsolescence. KCPL participates actively in a number of utility consortiums, utility forums and industry research, such as EPRI and IEEE, as well as utilizing historical maintenance records and operating experience to provide a foundation for asset management practices. As a result, KCPL strategically designs specific transmission and substation asset equipment inspections, maintenance plans and schedules, equipment testing schedules and equipment end-of-life replacement schedules based on the intelligence provided by these inputs.

Q: What programs are to be funded under the Transmission portion of the Asset Management Plan (the "Transmission Plan")?

A: KCPL has designated funding proposed for the transmission and substation assets under capital budget item BP01 – Transmission and Substations Asset Management Strategic Intent Program. The proposed funding breakdown for each program is detailed in the attached Schedule RAS-1.

Q: What progress has been made thus far with respect to the Transmission Plan?

A: The Transmission Plan includes nineteen (19) transmission and substation projects and programs.

Q: Could you please explain the various programs KCPL undertook in 2006 related to Transmission and Substation Asset Management?

A: Yes, KCPL undertook the following fourteen (14) Transmission and Substation Asset management programs in 2006:

Distribution Breaker Replacements

Distribution Feeder Breakers reaching the end of their life cycle will undergo a complete rebuild with replacement of worn bearings and linkages, refurbishment or replacement of trip and closing mechanisms and arc shoots. Currently, KCPL has approximately 180 GE breakers with an average age of 37 years that consistently cause excessive unplanned outages and increased maintenance costs. During 2006, a total of 36 distribution feeder breakers were completed thereby fulfilling the planned work for the year.

Remote Terminal Unit Replacements

Obsolete Remote Terminal Units ("RTUs") that provide remote monitoring and control of substation and transmission line equipment will be replaced and spare parts will be used for remaining units. KCPL currently has 37 obsolete RTUs for which spare parts are no longer available. Purchase orders were issued to Telvent for three new RTUs, and two of these RTUs were installed at the Kennilworth and Overland Park substations in 2006. The third RTU is in the process of being replaced at the Hickman

substation with 40% of the work was completed by the end of 2006 and the remaining work will be completed in the first quarter of 2007.

McGraw Edison PSD Breaker Replacements

KCPL has a total of 36 12-kV distribution breakers manufactured by McGraw Edison that are hydraulically operated and have a history of significantly decreased reliability and increased maintenance cost over time. These breakers will be replaced with current vacuum design type breakers. Twelve (12) breakers were purchased and installed at the Barry and Roeland Park substations. This completed the planned McGraw Edison breaker replacement work for 2006.

34-kV and 69-kV Circuit Breaker Replacements

KCPL has a number of 34-kV and 69-kV circuit breakers that are more than 50 years old and have reached end of life. A system-wide assessment was made for existing breakers at this voltage level, and a program developed to replace these beginning with the most problematic breakers first. Two 69-kV breakers were purchased and replaced during 2006. This completes the planned work for 2006.

Craig Substation 345-kV Circuit Breaker Replacements

At KCPL's Craig substation, two 345-kV breakers have SF6 (sulfur-hexafloride) gas leaking issues rendering these breakers unreliable and costly to maintain. Costs to rebuild these breakers were estimated to be as costly or more costly than complete replacement. Installing of new breakers eliminates the expense to consistently replace the SF6 gas and mitigates the risk of breaker failure. These two 345-kV breakers at Craig substation were replaced in 2006, and this work is completed.

Higginsville Pole Mounted GOAB Sectionalizing Switches Replacements

KCPL has a number of 69-kV pole-mounted sectionalizing switches that are obsolete and problematic. Due to their unreliability, outage durations are extended. By replacing these 69-kV switches with new and reliable switches, customer service levels will be improved by reducing outage durations for the affected 69-kV line sections. A replacement switch for Higginsville was purchased and delivered from the manufacturer in the third quarter of 2006. Installation is expected when a line clearance can be scheduled.

Corder Pole Mounted GOAB Sectionalizing Switches Replacements

KCPL has a number of 69-kV pole-mounted sectionalizing switches that are obsolete and problematic. Due to their unreliability, outage durations are extended. By replacing these 69-kV switches with new and reliable switches, customer service levels will be improved by reducing outage durations for the affected 69-kV line sections. A replacement switch for Corder was purchased and delivered from the manufacturer in the third quarter of 2006. Installation is expected when a line clearance can be scheduled.

Transmission Substation Disconnect Switch Replacements

KCPL has a number of 161-kV transmission substation disconnect switches that are over 40 years old and have reached end of life. This program will replace the worst performing switches. Two 161-kV disconnect switches have been replaced at Greenwood substation which completes the scheduled project work for 2006.

Transmission Wood Pole Replacements

KCPL has a comprehensive transmission pole and structure inspection and replacement program that includes GPS location cataloging, inspection schedules, repair

work and replacements. The transmission pole replacement initiative includes accelerated replacement of wood poles that are at end of life or are exhibiting an accelerated deterioration rate. Transmission pole replacements ensure viable transmission infrastructure for the future while mitigating risks of catastrophic failures and improving customer service levels and transmission system availability.

During 2006, thirty-three (33) transmission wood poles were replaced, and this completes the replacement schedule for the year.

161-kV Transmission Wood Cross-Arm Replacements

KCPL has a comprehensive transmission pole and structure inspection and replacement program that includes GPS location cataloging, inspection schedules, repair work and replacements. KCPL has identified 161-kV transmission wood cross-arms that are between 30 and 54 years old and at end of life. The transmission wood cross-arm initiative includes replacement of cross-arms that are at end of life or at an accelerated deterioration rate. Transmission wood cross-arm replacements ensure viable transmission infrastructure for the future while mitigating risks of catastrophic failures and improving customer service levels and transmission system availability. During 2006, sixteen (16) 161-kV cross-arms were replaced which was less than the scheduled plan of 40 replacements. This reduction was primarily due to KCPL's release of contract crews to provide mutual aid assistance for various storms affecting the transmission systems of various surrounding utilities throughout the year.

345-kV Transmission Wood Cross-Arm Replacements

KCPL has a comprehensive transmission pole and structure inspection and replacement program that includes GPS location cataloging, inspection schedules, repair

work and replacements. KCPL has identified 345-kV transmission wood cross-arms that are over 35 years old and at end of life. The transmission wood cross-arm initiative includes replacement of cross-arms that are at end of life or at an accelerated deterioration rate. Transmission wood cross-arm replacements ensure viable transmission infrastructure for the future while mitigating risks of catastrophic failures and improving customer service levels and transmission system availability. During 2006, sixteen (16) 345-kV cross-arms were replaced which fulfilled the scheduled plan for the year.

Hawthorn-Moberly – Structural Member Replacements

A significant number of structural members in this 102-mile 161-kV line have reached end of life or have accelerated deterioration and require replacement to avoid structural failure. This project accelerates the replacement of the worst structure members. During 2006, forty-one (41) structure arms were replaced. This completes the work scheduled for 2006.

Montrose ABCD Transmission Lines Pole Top Replacement

A significant number of structural members in these four 161-kV lines have reached end of life or have accelerated deterioration and require replacement to avoid structural failure. This project accelerates the replacement of the worst structure members. During 2006, thirty-eight (38) structure arms were replaced out of forty (40) structure arms estimated for replacement during the year. This work is essentially complete for 2006.

Galvanized Shield Wire Replacement

KCPL has several lines that have shown increased shield wire failures due to 40 year age, vibration fatigue, lightning damage, and corrosion. These failures cause increased frequency of transmission line outages that impact customer service and transmission line availability. This initiative identifies specific sections of shield wire to be replaced to mitigate shield wire failures and improve customer service levels. During 2006, 3.35 miles of shield wire have been replaced compared with a plan for six miles of replacement. Shield wire replacements were less than planned for the year due to KCPL's release of contract crews to provide mutual aid assistance for various storms affecting the transmission systems of various surrounding utilities throughout the year.

Q: Have you requested an adjustment to the transmission and substation maintenance expense?

A: Yes.

Q: Please explain the requested adjustment.

A: KCPL is requesting increased funding for additional Transmission and Substation initiatives that will enhance customer service levels, provide for improvements in operations, planning and maintenance activities and facilitate meeting the mandatory national and regional reliability standards. These transmission and substation adjustments total approximately $2.0 million above the 2006 test period and are shown in Schedule RAS-2. This adjustment is a component of Adj-26b—"Normalize transmission and distribution maintenance expense" on Schedule JPW-2, attached to the direct testimony of KCPL witness John P. Weisensee.

Q: What are the elements of the requested adjustment?

A: The elements of the requested adjustment are summarized as follows:

Transmission Operations Personnel and Software Systems

KCPL manages and supports a full-time transmission system control center where system operators and technical staff monitor, control, plan and coordinate transmission system operations. Influencing this operation is a growing set of reliability standards instituted by NERC and the SPP that will require additional support in order to maintain compliance to the standards. KCPL plans to meet these additional responsibilities by supplementing support staff to provide enhanced efforts in these areas and ensure that we fulfill each reliability standard and remain compliant with the standards.

KCPL also manages and maintains two real-time computer systems that monitor, control and support the generation, transmission and distribution systems. The Energy Management System ("EMS") and Outage Management System ("OMS") continue to expand in both scope of functionality and the need to integrate with new technology. As we move forward with the objectives set forth in our Distribution Automation strategy, these technology applications from the EMS and OMS systems become more critical in developing viable technology solutions. We have identified additional software and hardware systems necessary to support these goals. Total funding for these transmission operations personnel and software systems initiatives is $510,000.

Transmission and Substation Infrastructure Support

KCPL has identified a number of transmission and substation infrastructure support initiatives that require additional focus. These include: corrosion prevention for a number of steel towers and structures, substation circuit switcher pole replacements and

control house repairs. Addressing these will maintain customer service levels by mitigating catastrophic loss of equipment.

In the area of transmission vegetation management, KCPL has identified the application of aerial lift equipment that will dramatically improve trimming efficiencies and help to deploy trimming crews more effectively. This initiative serves to meet the overall objectives within KCPL's transmission vegetation management plan.

In the area of research, KCPL has consistently participated and helped fund industry-wide research in a variety of areas that, in time, translates into real-world utility solutions.

Facing a rising proportion of aging infrastructure within the industry, it is imperative that the kinds of research we participate in not only continue but be strengthened as well. We plan to provide increased funding for additional research activities with the expertise of EPRI and others in order to gain a collaborative set of solutions that will help to meet our infrastructure management goals. Total funding for this transmission and substation infrastructure support is $1,065,000.

Transmission Line Inspection

KCPL's plan is to accelerate the wood pole inspection schedule in order to return to normal inspection cycles. Inspections provide critical information on deterioration rates and are useful in determining end of life cycles. This in turn allows timely pole replacements to mitigate pole failures.

Transmission anchors and ground wire inspections and replacements are also an area of focus. KCPL continues to experience increased levels of vandalism and theft for transmission ground wires that have increased the need for additional inspection efforts.

KCPL intends to increase funding for this initiative in order to mitigate accelerated corrosion issues and vandalism events.

KCPL employs aerial inspection methods for transmission line assets that in turn provide a non-invasive, systematic and efficient approach to inspection work. Due to the expanding mileage of transmission line installed, we expect to increase and accelerate aerial inspections to improve both the rate at which we can inspect as well as to mitigate equipment failures.

Total funding for these transmission line inspection initiatives is $415,000.

Q: Are there other adjustment requests?

A: Yes.

Q: Please describe any additional adjustment requests?

A: KCPL has two additional transmission adjustment requests.

- Transmission base-plan funding obligations to SPP. These costs are detailed in Schedule RAS-3.
- Transmission funding obligations for NERC and SPP reliability compliance and enforcement. These costs are also detailed in Schedule RAS-3.

These two adjustments totaling $1,230,000 are included in Adj-48—"Adjust transmission expense for expansion projects of SPP" included in Schedule JPW-2 attached to the direct testimony of KCPL witness John P. Weisensee.

Q: Please describe the SPP transmission base-plan funding adjustment.

A: KCPL's membership in SPP provides several benefits and obligations. KCPL, as a transmission owner, has transferred functional control of its transmission facilities to the

SPP. This augments KCPL's transmission operations and planning activities by allowing the SPP to perform the following responsibilities:

- The SPP Open Access Transmission Tariff ("OATT") provides transmission customers a single transmission tariff for all KCPL transmission service purchased on our system.
- SPP acts as KCPL's Reliability Coordinator and is responsible for coordinated regional transmission operations to maintain bulk-power system reliability.
- SPP acts as KCPL's Planning Coordinator and performs regional planning activities for all SPP members resulting in a comprehensive regional transmission expansion plan. The expansion plan includes, among other things, proposed transmission element additions and upgrades within the SPP region in order to conform to applicable reliability requirements of the SPP, NERC and transmission owners.

I would like to expand upon the last item relating to the SPP regional transmission expansion plan. SPP's expansion plan proposes regional transmission element additions and includes a detailed list of projects in order to achieve the plan. A major portion of the expansion plan includes those projects that are termed "base plan upgrades," which are those transmission additions required to meet the mandatory NERC and SPP reliability standards and criteria. Due to the nature of the interconnected transmission system, these base-plan transmission additions produce indirect reliability benefits across the SPP region. Therefore, SPP employs cost allocation methodology to provide fair and equitable sharing of costs for base-plan transmission additions. The SPP cost allocation

calls for one-third of the project cost to be shared by all SPP members, and the remaining two-thirds of the project cost is allocated among the members that directly benefit from the project.

For the current SPP transmission expansion plan, KCPL has funding obligations of approximately $950,000 in 2007 for the region-shared, base-plan transmission expansion additions. Because the SPP transmission expansion plan is a relatively new process, there were no funding obligations required from KCPL in the 2006 year.

Q: Please describe the NERC & SPP reliability compliance and enforcement adjustment.

A: As a result of the Energy Policy Act of 2005, the FERC has been given specific responsibilities for the reliability of the bulk-power system. Also within the act, Congress directed the formation of a new Electric Reliability Organization and corresponding Reliability Entities whereby bulk-power reliability enforcement and compliance activities would take place. As a result, NERC and the Regional Entities - including SPP, are supplementing their existing infrastructure to implement these reliability compliance and enforcement responsibilities.

In late 2006, NERC and SPP budgets were submitted for 2007 indicating an increase of $230,000 for KCPL's portion of the NERC and SPP fees.

Q: Please discuss KCPL's Transmission Performance in 2006.

A: KCPL's transmission operational performance remains strong and is recognized in many areas as an industry leader. For transmission performance measurement, KCPL has taken a leadership role, along with EPRI, to develop the emerging transmission system metrics, which promises to provide our industry with a comprehensive set of specific, clear

performance metrics. We have taken further strides in 2006 to become even more focused on critical initiatives such as formalized asset management and improved efficiencies in operations and maintenance, technology applications and reliability standards compliance.

For 2006, KCPL measured the transmission system performance with the following performance metrics:

- Forced transmission line outages per hundred-mile year ("FOHMY") goal was 3.15, and 2006 year-end results were 2.496.
- Transmission component system availability index (SAIDI) goal was 5.0 minutes, and 2006 year-end results were 1.79 minutes. This represents the second lowest figure over the last six years, making 2006 a near-record year for minimizing customer interruptions.
- Transmission and substation availability goal was 99.900%, and 2006 year-end results were 99.580%. This goal was not met largely because of a catastrophic failure of a 345/161-kV autotransformer at our Stilwell substation rendering it out of service for 81 days during the last quarter of the year. KCPL has purchased a replacement scheduled for installation in June of 2007.
- Compliance with all NERC and SPP standards that apply to Transmission had a goal of 100%, and the 2006 year-end results were 94%. This goal was on track for the year but due to 4th quarter efforts by our Instrument and Relay group to implement the distribution dynamic voltage control, our relay test schedules were delayed. We will accelerate the upcoming 2007 schedule to resolve the delayed testing and remain on track for this work in the future. KCPL has consistently

been determined to be compliant with the reliability standards during all formal NERC and SPP audits.

- Transmission outages resulting from vegetation contacts remained targeted at zero, and the 2006 year-end result was zero.
- Percentage of transmission line miles patrolled annually is set at 100%, and the 2006 year-end result was 100%.
- Percentage of transmission structures maintained annually is set at 3.88%, and the 2006 year-end result was 4.17%.

Q: Does that conclude your testimony?

A: Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Kansas City Power & Light Company to Modify Its Tariff to Continue the Implementation of Its Regulatory Plan	)))	Case No. ER-2007-____

AFFIDAVIT OF RICHARD A. SPRING

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

Richard A. Spring, being first duly sworn on his oath, states:

1. My name is Richard A. Spring. I work in Kansas City, Missouri, and I am employed by Kansas City Power & Light Company as Vice President, Transmission 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 Seventeen (17) pages and Schedules RAS-1 through RAS-3, all of which 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.

Richard A Spring
RICHARD A. SPRING

Subscribed and sworn before me this 31st day of January 2007.

Nicol A. Wehry
Notary Public

My commission expires: Feb. 4 2007

NICOLE A. WEHRY
Notary Public - Notary Seal
STATE OF MISSOURI
Jackson County
My Commission Expires: Feb. 4, 2007

As of 1/3/2007

Transmission and Substations Asset Management Strategic Intent
Funding by Program

Project Name	Project Description	2006	2007	2008	2009	2010	Total Costs	Estimated Total	2006 Account Info	2007 Account Info	2008 Account Info	2009 Account Info	2010 Account Info
Overhaul 12kV BKRs (Approx $6K each)	Distribution breakers throughout the system have reached the end of their life cycle. The estimated life of this type of breaker is 20 year. Currently KCPL has approximately 180 General Electric distribution breakers with an average age of 37 years. These breakers are decreasing in reliably and causing more unplanned outages and maintenance cost. As these breakers become less reliable safety becomes an issue with faults not clearing as they should. If nothing is done the unplanned outages will increase exponentially in the following years.	$250,000	$250,000	$250,000	$250,000	$100,000	$1,100,000	180 bkrs	BP01 Auth 4980 02--75938 Crosstown 07-75939 Olathe 02-75940 Blue Valley 04-75942 Midtown 08-75971 Merriam	BP01 Auth 4023 04-75978 Southtown 08-75979 Brookridge 08-75980 Roeland Park 04-75981 Loma Vista			
Shield wire replacement on various transmission lines (Approx $25K/mile)	The over 40 year old galvanized steel shield wire is suffering increasing breaks due to vibrational fatigue, lightning embrittlement, and corrosion. Replacement will limit circuit outages, improve reliability, and curtail secondary damage to the distribution circuit and other attachments along these line sections.	$165,000	$165,000	$165,000	$165,000		$660,000	26 miles	BP01 Auth 2767 85-12527				
RTU Replacement (Approx $90K each)	Remote terminal units (RTU) are part of every substation, in the Kansas City metropolitan area. The RTU informs our control center of the system's condition, including voltage, line loading, breaker and alarm status. Also, the RTU allows for remote operation of substation equipment. We have 37 obsolete RTU's (27% of all our RTU's), and spare parts are no longer available for these units. Replacement of these RTU's will provide spare parts for the remaining units, and provide additional functionality of the new units.	$180,000	$180,000	$180,000	$180,000	$190,000	$910,000	10 RTUs	BP01 Auth 2747 85-13276 Overland Park 85-13277 Kenilworth 85-13278 Hickman	BP01 Auth 2779 35-13314 Hawthorn 08-75976 Lenexa			
Pole Replacement (est. 30 poles/year 06 - 09) (approx $6,700 ea)	Accelerated replacement of wood poles that have deteriorated due to decay, insect and wood pecker damage. This will limit the impact of pole structural failures on system reliability	$200,000	$200,000	$200,000	$200,000		$800,000	120 poles	BP01 Auth 2765 85-12516	BP01 Auth 2765 85-12517	BP01 Auth 2765 85-12518	BP01 Auth 2765 85-12519	
SF6 BKR Change-Out	Some of the 345kV SF6 (sulfur-hexafloride) breaker continues to leak and repairs have been unsuccessful. The cost of rebuilding is nearly the cost of a new breaker. Installing a new breaker will eliminate the need to constantly replace the SF6 gas and improve system reliability. Stilwell R2-5, W. Gardner R10-11		$400,000				$400,000	2 bkrs					

As of 1/3/2007

Project Name	Project Description	2006	2007	2008	2009	2010	Total Costs	Estimated Total	2006 Account Info	2007 Account Info	2008 Account Info	2009 Account Info	2010 Account Info
Polymer Insulator Replacement (Highway Crossings)	Recent use of deicing fluids by MDOT and KDOT on major highways and bridges, has caused transmission line insulators to flashover (short out) causing loss of transmission service. Identifying and replacing the most susceptible insulators, with new anti ice-flashover insulators, will reduce these service interruptions				$100,000		$100,000						
Reactors @ Hawthorn	The 40 year old, 13.8kV reactors (inductors) at Hawthorn have deteriorated due to weathering, and recent visual inspection has confirmed the possibility of compression rod fracture. Refurbishing these reactors is the most cost effective way to substantially reduce the risk of in-service failure.				$150,000		$150,000						
PSD HKR Replacement (approx $18K/breaker)	We currently have 36 McGraw Edison type PSD breakers left on our system. These breakers are hydraulically operated and have a history of issues that lead to decreased reliability and increased maintenance cost. As these breakers become less reliable safety becomes an issue with faults not clearing as they should. If nothing is done the unplanned outages will increase exponentially in the following years.	$220,000	$220,000	$220,000			$660,000	36 bkrs	BP01 Auth 4981 03-75943 Barry 08-75944 Lenexa	BP01 Auth 4024 08-75982 Roeland Park 03-75983 Claycomo			
161kV Trans. Arm Replacements (Approx $6K per arm)	Of the 3324 wood crossarms, many are untreated (NO wood preservatives) and between 30 to 54 years old. Installing new arms will reduce the risk of structural failure due to decay, insect and woodpecker damage; and thereby improve system reliability.	$220,000	$220,000	$300,000	$300,000	$325,000	$1,365,000	230 arms	BP01 Auth 2759 85-12509	BP01 Auth 2759 85-12510	BP01 Auth 2759 85-12511	BP01 Auth 2759 85-12512	
345kV Trans. Arm Replacement (est $12K/ arm)	Of the 1937 wood double crossarms, many are untreated (NO wood preservatives) and over 35 years old. Installing new arms will reduce the risk of structural failure due to decay, insect and woodpecker damage; and improve system reliability.	$279,000	$279,000	$450,000	$450,000	$400,000	$1,858,000	150 arms	BP01 (Old BF72) Auth 2727 85-12499	BP01 (Old BF72) Auth 2727 85-12500			
Hawthorn-Moberly	Many of the original untreated wood structural members in this 102 mile long line, built in 1951, have deteriorated significantly and should be replaced to avoid structural failure. This project accelerates the replacement of the worst locations.	$305,000	$215,000			$300,000	$820,000	164 arms	BP01 (Old BF44) Auth 2728 85-12501				
Montrose ABCD Line Pole Top Replacement ($4.6K/arm est. for these lines)	A number of the original wood structural members in these four, 40 year old 161kV lines, have deteriorated significantly and should be replaced to avoid structural failure. This project accelerates the replacement of the worst arms. There are about 1400 total.	$230,000	$385,000	$395,000	$300,000	$300,000	$1,610,000	350 locations	BP01 (Old BF26) Auth 2726 85-12494	BP01 (Old BF26) Auth 2726 85-12495	BP01 (Old BF26) Auth 2726 85-12496	BP01 (Old BF26) Auth 2726 85-12497	

As of 1/3/2007

Project Name	Project Description	2006	2007	2008	2009	2010	Total Costs	Estimated Total	2006 Account Info	2007 Account Info	2008 Account Info	2009 Account Info	2010 Account Info
Rebuild Shawnee-Greenwood Line (Est $12K per str) (significant backyard work)	This 42 year old 161kV line is exhibiting signs of deterioration in its untreated wood arms and wood poles. Rebuilding this line will eliminate service interruptions caused by deteriorated wood arm or pole failures.		$0	$150,000			$150,000	13 structures					
Replace various transmission disconnect switches (Approx $20K each)	Many disconnect switches on the transmission system are 40 or more years old. The failure rate on these switches has been increasing in recent years. Switches are critical items in the transmission system and high reliability is required to operate and maintain the system.	$40,000	$150,000	$150,000	$150,000	$75,000	$565,000	28 switches	BP01 Auth 2751 85-13248	BP01 Auth 2780 08-13316 Greenwood			
Replace various 34 & 69 kV circuit breakers (approx $60K each) (est. $20K each install for 2007 - 2008 work)	Many 34 kV and 69 kV Oil Circuit breakers are over 50 years old. Parts are scarce or unavailable and the breakers are requiring frequent maintenance to keep them performing reliably.	$120,000	$120,000	$140,000	$0	$0	$380,000	15 bkrs	BP01 Auth 2752 35-13285 BR03 85-13307,13308, 13309, 13310	BP01 Auth 2782 35-13318 Hawthorn 85-13319 Centerville 85-13320 Paola 85-13321 South Ottawa 85-13322 South Waverly	BP01 Auth 2782 35-13318 Hawthorn 85-13319 Centerville 85-13320 Paola 85-13321 South Ottawa 85-13322 South Waverly		
Craig R8-11 & R22-33 SF6 BKR Replacement	This 345kV SF6 (sulfur-hexafloride) breaker continues to leak and repairs have been unsuccessful. The cost of rebuilding is nearly the cost of a new breaker. Installing a new breaker will eliminate the need to constantly replace the SF6 gas and reduce the risk of failure.	$250,000					$250,000	1 bkr	BP01 (Old BD52) Auth 2739 85-13245 BP01 Auth 2749 85-13280 Craig R22-33				
GOAB @ Higginsville	By replacing the obsolete and marginal group operated pole mounted 69kV switches with new and reliable switches, outage durations will not be extended due to the failure of these sectionalizing two way switches.	$75,000					$75,000	1 switch	BP01 Auth 2762 85-12513				
GOAB @ Corder	By replacing the obsolete and marginal group operated pole mounted 69kV switches with new and reliable switches, outage durations will not be extended due to the failure of these sectionalizing three way switches.	$75,000					$75,000	1 switch	BP01 Auth 2763 85-12514				
Replace Allis Chalmers 15 kV Breakers (est. 15 - 20K each)	We have 38 Allis Chalmers type FC Air Circuit Breakers that were manufactured in the 1960's. Replacement parts have increasingly longer lead times and in many cases used parts from electrical equipment scrap dealer must be used. The FC breaker design requires the switchman to be inside the breaker cubicle in order to connect or disconnect it from the bus, increasing the likelihood of bodily injury in the event of a breaker failure. Replacement breakers can be connected and disconnected with the door closed.					$200,000	$200,000	12 bkrs					
	Totals	$2,609,000	$2,784,000	$2,600,000	$2,245,000	$1,890,000	$12,128,000						
	Transmission Related Programs	$1,549,000	$1,464,000	$1,660,000	$1,515,000	$1,325,000	$7,513,000						
	Substation Related Programs	$1,060,000	$1,320,000	$940,000	$730,000	$565,000	$4,615,000						
		$2,609,000	$2,784,000	$2,600,000	$2,245,000	$1,890,000	$12,128,000						

Schedule RAS-1

Transmission Services - Planned Increases in 2007			
Action	**Amount**	**Benefit**	**Account**
Accelerate maintenance and support of EMS and OMS software and hardware	$200,000	Reduced risk of cyber attacks and limit exposure to vendor cost increases in later years to reinstate support contracts. Ensure timely replacement of failed hardware, and maintain over all system availability and functionality.	561
1 Standards Compliance Coordinator	$85,000	Position will monitor compliance of KCP&L using current NERC Reliability Standards applicable to KCP&L Operations and coordinate KCP&L's interests in the development of new Standards	561
1 Transmission Energy Accounting Technical Specialist	$40,000	Position will support the application programs and databases that will be used by KCP&L Transmission Services as the Metering Agent for	561
1 System Operator Trainer	$85,000	Position will maintain a training program for System Operators in compliance with the NERC Standards and develop training simulations for the new EMS DTS	561
Software programs to support SPP EIS Market	$50,000	Develop new software programs and automate existing programs and databases for accurate tie-line metering data to support real-time market system deployment and timely settlement accounting	561
Software programs to support transmission planning	$50,000	Develop new software programs for the transmission facility database and purchase additional licenses for existing analysis software	561
	$510,000	Adj-26b-Trans	**561 Total**
Increase/accelerate contract spending for Steel structure and substation corrosion prevention on towers and poles	$160,000	Conduct structure corrosion prevention on painted steel structures (Towers and Poles), which are in need of corrosion prevention. Corrosion failure of structural integrity is of primary operational concern.	570
EPRI and other industry programs support	$500,000	Increasing our EPRI research, training, and industry program support will provide longevity to the aging asset in our system and better support the transmission market	570
Substation Circuit Switcher pole replacement	$100,000	Maintain and potentially enhance system reliability and integrity	570
Control House Roof Repair	$75,000	Maintain and potentially enhance system reliability. The aging structures that house our protective relay systems continue to need repair and replacement. and integrity	570
Transmission/Substation vegetation management	$230,000	Maintain and potentially enhance system reliability and integrity and enhance our customer relationships. Expansion will improve efficiencies of mechanical side cutting activities in rural areas and free up hand cutting operations to metropolitan area	570
	$1,065,000	Adj-26b-Trans	**570 Total**

Increase/accelerate contract spending for Wood pole inspections	$150,000	Wood pole inspections have been deferred five years prior to last year. The program expansion enables us to identify bad order poles and return to a reasonable inspection and restorative cycle	571
Increase/accelerate contract spending for Anchor inspections & replacement	$75,000	Expand anchor and Ground wire inspection and replacement in need of below grade inspection for corrosion. The majority of Metro anchors have been completed. Ground wire theft continues to place operational reliability at risk..	571
Increase/accelerate contract spending for aerial inspection	$150,000	Methods will allow a systematic approach to field evaluation and maintenance activities, which will *insure ongoing structure reliability.*	571
TS- Line monitoring equipment	$40,000	Reduced TLR which could lead to reduced KCPL redispatch	571
	$415,000	Adj-26b-Trans	**571 Total**
	$1,990,000		**Grand Total**

KCPL's SPP Transmission Base-Plan Funding Obligations

KCP&L
LaCygne Gardner Revenues/SPP transmission expansion projects expense

	2006 Actuals										2006 Budget				2007 Budget Per 1-6							2007 Budget Per 7-9				2007 Budget Per 7-9			
	Per									Balance				Balance							Balance				Balance				Balance
Item	1	2	3	4	5	6	7	8	9	Sept 2006	10	11	12	Dec 2006	1	2	3	4	5	6	June 2007	7	8	9	Sept 2007	10	11	12	Dec-07
LaCygne Gardner Revenues included in account 456100	0	0	0	0	0	0	(24,903)	(17,582)	(20,050)	(62,535)	(20,000)	(20,000)	(20,000)	(122,535)	(20,000)	(20,000)	(20,000)	(20,000)	(20,000)	(20,000)	(120,000)	(20,000)	(20,000)	(20,000)	(180,000)	(20,000)	(20,000)	(20,000)	(240,000)
Transmission Expansion Projects included in a/c 565000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	83,333	83,333	83,333	83,333	83,333	83,333	500,000	83,333	83,333	83,333	750,000	83,333	83,333	83,333	1,000,000
NERC/SPP Fees															19,167	19,167	19,167	19,167	19,167	19,167	115,000	19,167	19,167	19,167	172,500	19,167	19,167	19,167	230,000
Grand Total	0	0	0	0	0	0	(24,903)	(17,582)	(20,050)	(62,535)	(20,000)	(20,000)	(20,000)	(122,535)	83,333	83,333	83,333	83,333	83,333	83,333	380,000	83,333	83,333	83,333	670,000	83,333	83,333	83,333	760,000

Annualize 9/07 amounts:

LaCygne Gardner Revenues	(240,000)	
Balance at 12/31/06	(122,535)	
	(117,465)	Adj-46
Transmission expansionm Expense	1,000,000	Adj-46
NERC/SPP Fees	230,000	Adj-46
	1,112,535	

A/C 456
A/C 565
A/C 560

2006 Actual
Actual revenues for periods 1-9 gathered directly from PeopleSoft.

2006/2007 Budget data
Budgeted revenues for transmission expansion projects for 2007 are per Patty Denny, Senior Tech Professional (Interchange).
Budgeted revenues for the LaCygne Gardner upgrade line are per Paul Prue, Senior Tech Professional.

Other Relevant data
We will be assessed fees related to transmission service for transmission expansion projects of SPP members. Other than this, there are no other **new** incremental SPP costs pertaining to *transmission* fees for 2007.

NERC/SPP Fees - Additional responsibilities from the newly formed Electric Reliability Organization (designated to NERC) and Regional Entity responsibilities (designated to SPP) are raising membership costs. *NERC and SPP proposed budgets for 2007* have increased by $230,000 over that of 2006 last year; Per Todd Fridley, Transmission Policy Coordinator; Transmission Services