

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

Current Report

Pursuant to Section 13 or 15(d) of the
Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): May 6, 2010

Commission File Number	Registrant, State of Incorporation, Address and Telephone Number	I.R.S. Employer Identification Number
001-32206	GREAT PLAINS ENERGY INCORPORATED (A Missouri Corporation) 1200 Main Street Kansas City, Missouri 64105 (816) 556-2200 NOT APPLICABLE (Former name or former address, if changed since last report)	43-1916803
000-51873	KANSAS CITY POWER & LIGHT COMPANY (A Missouri Corporation) 1200 Main Street Kansas City, Missouri 64105 (816) 556-2200 NOT APPLICABLE (Former name or former address, if changed since last report)	44-0308720

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

This combined Current Report on Form 8-K is being furnished by Great Plains Energy Incorporated (Great Plains Energy) and Kansas City Power & Light Company (KCP&L). KCP&L is a wholly owned subsidiary of Great Plains Energy and represents a significant portion of its assets, liabilities, revenues, expenses and operations. Thus, all information contained in this report relates to, and is furnished by, Great Plains Energy. Information that is specifically identified in this report as relating solely to Great Plains Energy, such as its financial statements and all information relating to Great Plains Energy's other operations, businesses and subsidiaries, including KCP&L Greater Missouri Operations Company (GMO), does not relate to, and is not furnished by, KCP&L. KCP&L makes no representation as to that information. Neither Great Plains Energy nor GMO has any obligation in respect of KCP&L's debt securities and holders of such securities should not consider Great Plains Energy's or GMO's financial resources or results of operations in making a decision with respect to KCP&L's debt securities. Similarly, KCP&L has no obligation in respect of securities of Great Plains Energy or GMO.

Item 2.02 Results of Operations and Financial Condition

On May 6, 2010, Great Plains Energy issued a press release announcing first quarter 2010 results and affirming 2010 earnings guidance. A copy of the press release is attached as Exhibit 99.1.

The press release contains information regarding KCP&L. Accordingly, information in the press release relating to KCP&L is also being furnished on behalf of KCP&L.

The information under this Item 2.02 and in Exhibit 99.1 hereto is being furnished and shall not be deemed filed for the purpose of Section 18 of the Securities Exchange Act of 1934, as amended. The information under this Item 2.02 and Exhibit 99.1 hereto shall not be deemed incorporated by reference into any registration statement or other document pursuant to the Securities Act of 1933, as amended, unless otherwise expressly indicated in such registration statement or other document.

Item 9.01 Financial Statements and Exhibits

(d) Exhibit No.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

GREAT PLAINS ENERGY INCORPORATED

/s/ Michael W. Cline
Michael W. Cline
Vice President-Investor Relations and Treasurer

KANSAS CITY POWER & LIGHT COMPANY

/s/ Michael W. Cline
Michael W. Cline
Vice President-Investor Relations and Treasurer

Date: May 6, 2010.

Exhibit Index

Exhibit No.	Title
99.1	Press release issued by Great Plains Energy Incorporated on May 6, 2010 (furnished and not deemed filed for the purpose of Section 18 of the Securities Exchange Act of 1934, as amended).

**GREAT PLAINS ENERGY REPORTS FIRST QUARTER
2010 RESULTS AND AFFIRMS 2010 EARNINGS GUIDANCE**

Kansas City, Mo. (May 6, 2010) — Great Plains Energy (NYSE: GXP) today announced first quarter 2010 earnings of \$19.9 million or \$0.15 per share of common stock outstanding, compared with first quarter 2009 earnings of \$21.3 million or \$0.18 per share. First quarter earnings were in-line with expectations, therefore, the Company affirms its earnings guidance range for 2010 of \$1.20 to \$1.40 per share.

The Electric Utility segment, which includes the regulated utility operations of Kansas City Power & Light (“KCP&L”) and KCP&L Greater Missouri Operations (“GMO”), generated net income of \$24.9 million in the quarter, a significant increase over the 2009 period’s \$7.4 million. The segment benefited from new retail rates that took effect in the third quarter of 2009, higher retail demand across all customer segments from colder weather and an improving regional economy, and increased wholesale sales made possible by higher overall availability of the Company’s generating units.

“A year ago, our region, like the rest of the country, was plunging into recession. Now we are pleased to see a gradually improving trend in energy consumption across our customer base,” stated Mike Chesser, Chairman and CEO. “Though we believe caution is still warranted concerning the economy, as we look ahead over the balance of 2010, we believe the worst of the recession is behind us. We are pleased that we were able to persevere through the crisis to achieve a number of key construction, operational, regulatory, and financing-related milestones.”

**GREAT PLAINS ENERGY
Consolidated Earnings and Earnings Per Share
Three Months Ended March 31
(Unaudited)**

	Earnings		Earnings per Great Plains Energy Share	
	2010	2009	2010	2009
	(millions)			
Electric Utility	\$ 24.9	\$ 7.4	\$ 0.18	\$ 0.06
Other	(4.6)	14.3	(0.03)	0.12
Net income	20.3	21.7	0.15	0.18
Preferred dividends	(0.4)	(0.4)	-	-
Earnings available for common shareholders	\$ 19.9	\$ 21.3	\$ 0.15	\$ 0.18

Great Plains Energy First Quarter:

Key drivers influencing first quarter 2010 earnings compared to 2009 were the following items:

- A \$17.5 million increase in Electric Utility segment net income primarily driven by a \$65.6 million increase in gross margin (a non-GAAP financial measure described in Attachment A) partially offset by increases in operating expenses and depreciation and amortization of approximately \$14 million and \$13 million, respectively; and
- An \$18.9 million decrease in Other segment results, attributable primarily to a \$16.0 million tax benefit at GMO in 2009.

Average shares of common stock outstanding increased 15 percent to 136.6 million shares primarily as a result of shares issued in the 2009 public offering, which resulted in dilution of \$0.02 per share.

Great Plains Energy continued to maintain a strong liquidity position during the quarter. As of March 31, 2010, approximately \$830 million of available capacity remained on the Company's \$1.4 billion of revolving credit facilities.

Electric Utility Segment First Quarter:

Quarterly earnings for the Electric Utility segment were \$24.9 million or \$0.18 per share compared to \$7.4 million or \$0.06 per share in 2009. Segment results also reflect additional shares outstanding, causing segment dilution of \$0.03 per share for the period.

Key drivers influencing the segment results included the following:

- A \$65.6 million, or 24 percent, increase in gross margin primarily due to an approximate \$50 million increase in revenues from new retail rates, which became effective on August 1 in Kansas and September 1 in Missouri;
- Increased operating expense of \$13.8 million primarily due to a \$10.3 million increase in operating and maintenance expenses driven primarily by planned plant outages; and
- Increased depreciation and amortization of \$13.2 million
 - o Approximately \$7.0 million was driven by additional regulatory amortization pursuant to KCP&L's 2009 rate cases, with the remainder primarily due to depreciation of environmental projects placed in service in the second quarter of 2009.

Retail Megawatt hour (MWh) sales increased approximately 6 percent in the 2010 quarter due to:

- Favorable winter weather, which accounted for approximately two-thirds of the sales volume increase and an increase of about \$12 million in retail revenues.
 - o Compared to normal, the positive revenue impact in the 2009 quarter was approximately \$8.9 million; and

- Weather-normalized customer demand, which improved 1.9 percent, reflecting an improving economic climate in the segment's service territory. On a weather-normalized basis, consumption rose 3.5 percent and 2.3 percent, and 0.1 percent in the residential, industrial and commercial segments, respectively. This contributed an approximate \$3 million increase to retail revenues.

Wholesale MWhs sold increased 63 percent primarily from significantly-improved coal fleet availability. Wholesale revenues increased \$21.0 million as a result of the increased MWhs sold and a 13 percent increase in the average market price per MWh sold. Since wholesale margins are returned to customers under fuel adjustment clauses at GMO and in KCP&L's Kansas jurisdiction, the gross margin benefit from this revenue increase impacted only KCP&L's Missouri results. For the quarter, this amount was approximately \$3 million.

Coal plant availability in 2010's first quarter improved significantly compared to the 2009 period, when Iatan 1 was off-line for the entire quarter to complete an environmental upgrade and unit overhaul and Sibley 3 was out of service for roughly half the quarter to complete an environmental upgrade. This improvement in coal fleet availability drove improved overall fleet availability in the 2010 quarter, more than offsetting the impact of Wolf Creek's 7-day forced outage in March 2010 which lowered its performance compared to the 2009 period.

	Three Months Ended	
	March 31	
	2010	2009
Equivalent Availability - Coal Fleet	78%	64%
Capacity Factor - Coal Fleet	71%	58%
Equivalent Availability - Wolf Creek	92%	100%
Capacity Factor - Wolf Creek	93%	100%
Equivalent Availability - Total GPE (Coal and Nuclear)	80%	69%
Capacity Factor - Total GPE (Coal and Nuclear)	74%	64%

Other Segment First Quarter:

Results for the Other segment primarily include unallocated corporate charges, GMO non-regulated operations and preferred dividends. For the 2010 first quarter, the Other segment generated a loss of \$5.0 million or \$0.03 per share compared to an earnings contribution of \$13.9 million or \$0.12 per share in 2009.

The 2010 quarter results reflect \$4.6 million of after-tax interest expense from the Equity Units issued in May 2009, while results for the 2009 quarter included a \$16.0 million tax benefit from a 2003-04 tax audit settlement at GMO.

The Company has posted its 2010 First Quarter Form 10-Q, as well as supplemental financial information related to the first quarter on its website, www.greatplainsenergy.com.

Earnings Webcast Information:

An earnings conference call and webcast is scheduled for **9:00 a.m. EDT Friday, May 7, 2010**, to review the Company's first quarter 2010 financial results and business outlook.

A live audio webcast of the conference call, presentation slides, supplemental financial information, and the earnings press release will be available on the investor relations page of Great Plains Energy's website at www.greatplainsenergy.com.

The conference call can be accessed by dialing 877-791-9323 (U.S./Canada) or 706-758-1332 (international) five to ten minutes prior to the scheduled start time. The confirmation code is 66286710. The call will also be webcast and may be accessed in a listen-only mode at www.greatplainsenergy.com.

A replay and transcript of the call will be available later in the day by accessing the Investor Relations section of the company's website. A telephonic replay of the conference call will also be available for one week following the call by dialing 800-642-1687 (U.S./Canada) or 706-645-9291 (international). The confirmation code is 66286710.

About The Companies:

Headquartered in Kansas City, Mo., Great Plains Energy Incorporated (NYSE: GXP) is the holding company of Kansas City Power & Light Company and KCP&L Greater Missouri Operations Company, two of the leading regulated providers of electricity in the Midwest. Kansas City Power & Light and KCP&L Greater Missouri Operations use KCP&L as a brand name. More information about the companies is available on the Internet at: www.greatplainsenergy.com or www.kcpl.com.

Forward-Looking Statements:

Statements made in this release that are not based on historical facts are forward-looking, may involve risks and uncertainties, and are intended to be as of the date when made. Forward-looking statements include, but are not limited to, the outcome of regulatory proceedings, cost estimates of the Comprehensive Energy Plan and other matters affecting future operations. In connection with the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, Great Plains Energy and KCP&L are providing a number of important factors that could cause actual results to differ materially from the provided forward-looking information. These important factors include: future economic conditions in regional, national and international markets and their effects on sales, prices and costs, including but not limited to possible further deterioration in economic conditions and the timing and extent of any economic recovery; prices and availability of electricity in regional and national wholesale markets; market perception of the energy industry, Great Plains Energy and KCP&L; changes in business strategy, operations or development plans; effects of current or proposed state and federal legislative and regulatory actions or developments, including, but not limited to, deregulation, re-regulation and restructuring of the electric utility industry; decisions of regulators regarding rates the companies can charge for electricity; adverse changes in applicable laws, regulations, rules, principles or practices governing tax, accounting and environmental matters including, but not limited to, air and water quality; financial market conditions and performance including, but not limited to, changes in interest rates and credit spreads and in availability and cost of capital and the effects on nuclear decommissioning trust and pension plan assets and costs; impairments of long-lived assets or goodwill; credit ratings; inflation rates; effectiveness of risk management policies and procedures and the ability of counterparties to satisfy their contractual commitments; impact of terrorist acts; increased competition including, but not limited to, retail choice in the electric utility industry and the entry of new competitors; ability to carry out marketing and sales plans; weather conditions including, but not limited to, weather-related damage and their effects on sales, prices and costs; cost, availability, quality and deliverability of fuel; ability to achieve generation planning goals and the occurrence and duration of planned and unplanned generation outages; delays in the anticipated in-service dates and cost increases of additional generating capacity and environmental projects; nuclear operations; workforce risks, including, but not limited to, increased costs of retirement, healthcare and benefits; the timing and amount of resulting synergy savings from the GMO acquisition; and other risks and uncertainties.

This list of factors is not all-inclusive because it is not possible to predict all factors. Other risk factors are detailed from time to time in Great Plains Energy's and KCP&L's most recent quarterly report on Form 10-Q and annual report on Form 10-K filed with the Securities and Exchange Commission. Each forward-looking statement speaks only as of the date of the particular statement. Great Plains Energy and KCP&L undertake no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

Great Plains Energy Contacts:

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Attachment A

Gross margin is a financial measure that is not calculated in accordance with generally accepted accounting principles (GAAP). Gross margin, as used by Great Plains Energy, is defined as operating revenues less fuel, purchased power and transmission of electricity by others. The Company's expense for fuel, purchased power and transmission of electricity by others, offset by wholesale sales margin, is subject to recovery through cost adjustment mechanisms, except for KCP&L's Missouri retail operations. As a result, operating revenues increase or decrease in relation to a significant portion of these expenses. Management believes that gross margin provides a more meaningful basis for evaluating the Electric Utility segment's operations across periods than operating revenues because gross margin excludes the revenue effect of fluctuations in these expenses. Gross margin is used internally to measure performance against budget and in reports for management and the Board of Directors. The Company's definition of gross margin may differ from similar terms used by other companies. A reconciliation to GAAP operating revenues is provided in the table below.

Great Plains Energy Incorporated
Reconciliation of Gross Margin to Operating Revenues
(Unaudited)

Three Months Ended March 31	2010	2009
	(millions)	
Operating revenues	\$ 506.9	\$ 419.2
Fuel	(101.8)	(87.6)
Purchased power	(65.5)	(57.2)
Transmission of electricity by others	(5.6)	(6.0)
Gross margin	<u>\$ 334.0</u>	<u>\$ 268.4</u>

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