

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 11-K

ANNUAL REPORT PURSUANT TO SECTION 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2009

OR

TRANSITION REPORT PURSUANT TO SECTION 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission file number 0-33207

A. Full title of the plan and the address of the plan, if different from that of the issuer named below:

Great Plains Energy Incorporated
401(k) Savings Plan
(hereinafter referred to as Plan)

B. Name of issuer of the securities held pursuant to the Plan and the address of its principal executive office:

Great Plains Energy Incorporated
1200 Main Street
Kansas City, Missouri 64105

GREAT PLAINS ENERGY INCORPORATED 401(K) SAVINGS PLAN

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Note: All other schedules required by Section 2520.103-10 of the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974 have been omitted because they are not applicable.

Exhibit No.	Description
23	Consent of Independent Registered Public Accounting Firm

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Participants and Administrative Committee of the

Great Plains Energy Incorporated 401(k) Savings Plan

Kansas City, Missouri

We have audited the accompanying statements of net assets available for benefits of the Great Plains Energy Incorporated 401(k) Savings Plan (the "Plan") as of December 31, 2009 and 2008, and the related statement of changes in net assets available for benefits for the year ended December 31, 2009. These financial statements are the responsibility of the Plan's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Plan is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Plan's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, such financial statements present fairly, in all material respects, the net assets available for benefits of the Plan as of December 31, 2009 and 2008, and the changes in net assets available for benefits for the year ended December 31, 2009, in conformity with accounting principles generally accepted in the United States of America.

Our audits were conducted for the purpose of forming an opinion on the basic financial statements taken as a whole. The supplemental schedules listed in the Table of Contents as of and for the year ended December 31, 2009, are presented for the purpose of additional analysis and are not a required part of the basic 2009 financial statements, but are supplementary information required by the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974. These schedules are the responsibility of the Plan's management. Such supplemental schedules have been subjected to the auditing procedures applied in our audit of the basic 2009 financial statements and, in our opinion, are fairly stated in all material respects when considered in relation to the basic 2009 financial statements taken as a whole.

/s/ DELOITTE & TOUCHE LLP

Kansas City, Missouri

June 10, 2010

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**GREAT PLAINS ENERGY INCORPORATED
401(k) SAVINGS PLAN**
**STATEMENTS OF NET ASSETS AVAILABLE FOR BENEFITS
DECEMBER 31, 2009 AND 2008**

	<u>2009</u>	<u>2008</u>
ASSETS:		
Investments—at fair value (Note 3)	\$ 372,409,163	\$ 178,325,051

EMPLOYER CONTRIBUTION RECEIVABLE	50,580	–
CASH	23,335	3,000
NET ASSETS AVAILABLE FOR BENEFITS AT FAIR VALUE	372,483,078	178,328,051
Adjustment from fair value to contract value for fully benefit-responsive stable value funds	<u>1,426,020</u>	<u>896,774</u>
NET ASSETS AVAILABLE FOR BENEFITS	<u>\$ 373,909,098</u>	<u>\$ 179,224,825</u>

See notes to financial statements.

**GREAT PLAINS ENERGY INCORPORATED
401(k) SAVINGS PLAN**

**STATEMENT OF CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS
YEAR ENDED DECEMBER 31, 2009**

Additions:		
Investment income:		
Net appreciation in fair value of investments		\$ 51,987,116
Interest		532,441
Dividends		6,246,439
Net investment income		<u>58,765,996</u>
Contributions:		
Employer contributions		7,212,202
Employee contributions		19,717,648
Rollovers		709,409
Total contributions		<u>27,639,259</u>
Total additions		86,405,255
Deductions:		
Benefits paid to participants		25,229,173
Dividend distributions		110,508
Expenses paid		48,696
Total deductions		<u>25,388,377</u>
INCREASE IN NET ASSETS		61,016,878
TRANSFER FROM KCP&L GREATER MISSOURI OPERATIONS COMPANY RETIREMENT INVESTMENT PLAN		133,667,395
NET ASSETS AVAILABLE FOR BENEFITS		<u>179,224,825</u>
Beginning of year		<u>179,224,825</u>
End of year		<u>\$ 373,909,098</u>

See notes to financial statements.

GREAT PLAINS ENERGY INCORPORATED 401(K) SAVINGS PLAN

**NOTES TO FINANCIAL STATEMENTS
AS OF DECEMBER 31, 2009 AND 2008 AND FOR THE YEAR ENDED DECEMBER 31, 2009**

1. PLAN DESCRIPTION

The following description of the Great Plains Energy Incorporated 401(k) Savings Plan (the Plan) is provided for general information purposes only. Participants should refer to the Plan document for more complete information.

General - The Plan is a defined contribution plan covering all full time and part time management and bargaining unit employees of Kansas City Power & Light Company (KCP&L), sponsored by Great Plains Energy Incorporated (the Company). The Plan provides that employees are eligible to make elective contributions to the Plan as of the first payroll period beginning on or after date of hire. The Company serves as the administrator of the Plan. Through June 30, 2009, Fidelity Management Trust Company (Fidelity) served as the trustee and recordkeeper of the Plan. Effective July 1, 2009, JP Morgan Retirement Plan Services (JP Morgan) serves as the recordkeeper for the Plan and JPMorgan Chase, N.A. serves as the Plan's trustee. The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974 (ERISA).

Effective July 14, 2008, the Company acquired Aquila, Inc. (Aquila) which became a wholly-owned subsidiary of the Company. Each share of Aquila common stock was exchanged for 0.0856 shares of Great Plains Energy common stock and \$1.80. Immediately prior to the acquisition by Great Plains Energy, Aquila sold its Colorado electric operations and its Colorado, Iowa, Kansas and Nebraska natural gas operations to Black Hills Corporation (Black Hills). Approximately 1,000 employees of these utility operations of Aquila became employees of Black Hills effective upon the sale and were treated as terminated employees. In addition, approximately 100 employees were terminated effective with the merger. All employees of Aquila that were not terminated, or did not become employees of Black Hills, became employees of KCP&L. After the acquisition, Aquila, Inc. was renamed KCP&L Greater Missouri Operations Company. Effective July 1, 2009, the KCP&L Greater Missouri Operations Company Retirement Investment Plan (GMO Plan) was merged into the Plan. Participant account balances of \$133,667,395 were transferred on June 30, 2009 to facilitate the merger on July 1, 2009.

An Employee Stock Ownership Plan (ESOP) component was added to the Plan on January 1, 2002. The ESOP component consists of the portion of the Plan that is invested in Great Plains Energy Incorporated common stock. Adding this component gives participants the option of receiving a direct cash distribution of any dividends paid on such stock held in participant elective contribution accounts and, if they are 100% vested as of the dividend record date, their Company match accounts. Dividends paid on Company stock are automatically reinvested, unless the cash distribution was elected.

Contributions - The Plan was restated on January 1, 2008, January 1, 2009 and on July 1, 2009. Prior to the effective date of the January 1, 2008 restatement, management employees who were hired prior to September 1, 2007 could elect to continue to participate under the existing (old

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program) plan provisions (provisions prior to January 1, 2008) or under modified plan provisions (new program). All union employees participate in the old program and all management employees hired on or after September 1, 2007 (including former employees of Aquila who became employees of KCP&L on July 14, 2008 as a result of the acquisition) participate in the new program.

Under the old program, each year participants may contribute between 2% and 40% of their annual compensation as defined in the Plan. Effective January 1, 2008, the new program allowed new program participants to make salary deferrals up to 75% of annual compensation. Contributions under the old program and new program are subject to statutory limitations. Under either program participants who have attained age 50 and who elect to make the maximum level of elective contributions, as defined by the Plan, may elect to make a catch-up contribution. Participants direct the investment of their contributions into various investment options offered by the Plan.

The Plan was restated effective January 1, 2009 in connection with the application for an updated IRS determination ruling letter in addition to amending the Plan to lower the mandatory cash-out limit from \$5,000 to \$1,000, expanding the installment distribution options.

The Plan currently offers investment options which include 24 mutual funds, Company stock, three common/collective trust funds and a brokerage account. Eighteen mutual funds and one common/collective trust fund that were investment options in the Plan or the GMO Plan prior to the plan merger are expected to be eliminated and the balances transferred to the current investment line-up on July 1, 2010. Participants may purchase shares of mutual funds not offered by the Plan through the brokerage account. Matching contributions are invested in Great Plains Energy Incorporated Common Stock unless the participant makes an affirmative election for a different investment option(s). The Plan was amended effective January 1, 2010 to direct matching contributions into a target date fund appropriate to the participant's normal retirement age unless the employee makes an affirmative election for a different investment option(s). Employee contributions are also invested in a target date fund appropriate to the participant's age unless the participant makes an affirmative election for a different investment option(s).

Effective January 1, 2008, new program management participants became eligible for a matching contribution immediately upon participation after hire; old program management participants and all union participants continued to be eligible for a matching contribution after completing one year of service. The Company contributes 50% of the employee's elective contribution, not to exceed 3% of annual compensation, as defined in the Plan under the old program. Under the new program, the Company contributes up to 100% of the first 6% of annual compensation, as defined in the Plan.

In the old program, compensation is defined as base pay and, depending on bargaining status, shift differentials and some overtime. Under the new program, compensation is defined as base, bonus, incentive, and overtime pay. In the 2008 restatement of the Plan, Flex Dollars were inadvertently included in the definition of compensation under the new program. However, this was an unintended change and was neither communicated to participants nor implemented. When the error was realized in 2009, the Company amended the Plan effective July 1, 2009 to remove Flex Dollars from the definition of compensation. A filing under the IRS Voluntary Correction Program has been completed to secure approval to remove Flex Dollars from the definition of compensation retroactive to January 1, 2008.

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Additionally, all employees hired on or after January 1, 2008, unless they opt out or make an affirmative election for a different deferral rate, are automatically enrolled in the Plan at a 6% contribution level. Employees have a 30-day notice period in which to opt-out or modify the automatic enrollment. Automatically enrolled participants have 90 days after the first employee contribution to withdraw funds that have been automatically contributed, without penalty.

Contributions are subject to certain Internal Revenue Code (IRC) limitations.

Subsequent to December 31, 2009, employer contributions of \$150,707 attributable to the 2009 plan year were credited to participant accounts. These contributions were funded in part through utilizing forfeitures of \$100,127 and the remainder of the amount was contributed by the Company, and is therefore presented as a receivable on the statement of net assets as of December 31, 2009.

Participant Accounts - Each participant's account is credited with the participant's contribution and allocations of (a) the Company's contribution, (b) Plan earnings, and charged with an allocation of administrative expenses as applicable. Allocations are based on participant earnings or account balances, as defined. The benefit to which a participant is entitled is the benefit that can be provided from the participant's vested account.

Vesting - Participants are immediately vested in their voluntary contributions plus actual earnings thereon. If the employee continues to participate under the old program, vesting in the Company matching contributions portion of their accounts plus earnings thereon is based on years of continuous service. A participant is partially vested after two years and 100% vested after six years of credited service. However, full vesting of the employer match under the Plan is preserved for former Aquila employees who became employees of KCP&L when GPE acquired Aquila. Employees participating in the new program are immediately vested in the Company matching contributions. Participants who retire after age 55, die or become totally or permanently disabled while an employee of the Company are considered 100% vested in the Company matching contributions, regardless of their length of service.

Participant Loans - The Plan allows participants to borrow up to the lesser of one-half of the vested amount of their participant account, or \$50,000 reduced by the excess of the participant's highest loan balance that existed during the one year period ending on the day before the date a new loan is made over the outstanding balance of any loan on the date a new loan is made. The minimum loan amount is \$1,000. Loans for the acquisition of the participant's primary residence must be repaid within 15 years. All other loans must be repaid within 5 years. Interest is charged at prevailing market rates at the time the loan is funded plus 2% and is fixed over the life of the loan. Participants pay a one-time loan origination fee at the time the loan is executed.

Payment of Benefits - Participants who leave the Company as a result of termination, retirement, or permanent disability may receive the vested interest in their account in one lump-sum payment, a partial lump sum payment of \$1,000 or more, in a series of monthly or annual installments, rollover their account to another trustee, or elect to defer distribution. Upon death, distributions will be made to beneficiaries in a lump sum or in monthly or annual installments over a period of no more than three years. If the value of the participant's retirement, termination, or disability benefit is \$1,000 or less, payment shall be made to the participant as soon as practicable in a single lump sum distribution. In all other cases, at the election of the participant in a manner prescribed by the Administrative Committee or its designee, retirement,

disability, and termination benefits shall be paid in a single lump sum distribution or in a series of substantially equal monthly or annual installments over a period of not longer than five years. In the absence of a written directive from the participant as to the manner of payment, if the value of the participant's retirement, termination, or disability benefit is greater than \$1,000, payment shall be made in annual installments over a period of five years.

Forfeited Accounts - At December 31, 2009 and 2008 there were \$136,563 and \$122,467 in forfeited non-vested accounts, respectively. Forfeitures in the amount of \$70,343 were used to fund the 2008 match true-up contributions in March 2009. Forfeitures in the amount of \$100,127 were used to fund the 2009 match true-up contributions in March 2010.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Accounting - The accompanying financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America.

Use of Estimates - The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of net assets available for benefits and changes therein. Actual results could differ from those estimates.

Risks and Uncertainties - The Plan utilizes various investment instruments, including common stock, mutual funds, a brokerage account and common/collective trust funds. Investment securities, in general, are exposed to various risks, such as interest rate, credit, and overall market volatility. Due to the level of risk associated with certain investment securities, it is reasonably possible that changes in the values of investment securities will occur in the near term and such changes could materially affect the amounts reported in the financial statements.

Investment Valuation and Income Recognition - The Plan's investments are stated at fair value. Fair value of a financial instrument is the price that would be received to sell an asset in an orderly transaction between market participants at the measurement date. Shares of Company stock are valued at quoted market price. Shares of mutual funds and cash reserves are valued at quoted market prices, which represent the net asset value of shares held by the Plan at year-end. The common/collective trust funds are stated at estimated fair value as determined by the issuer of the common/collective trust fund based on the fair market value of the underlying investments. Participant loans are valued at the outstanding loan balance, which approximates fair value.

The Fidelity Managed Income Portfolio (the Portfolio) is a common/collective trust fund that is considered to be a stable value fund with underlying investments in investment contracts and is valued at fair value and then adjusted by the issuer to contract value. Fair value of the stable value fund is the net asset value of its underlying investments and contract value is principal plus accrued interest. The Portfolio is a stable value fund that is an open-end commingled pool dedicated exclusively to the management of assets of defined contribution plans. The Portfolio's investment objective is to seek preservation of capital and a competitive level of income over time. To achieve its investment objective, the Portfolio invests in underlying assets (typically fixed income securities or bond funds and may include derivative instruments such as futures contracts and swap agreements) and enters into a "wrapper" contract issued by a third party. Participants may ordinarily direct the withdrawal or transfer of all or a portion of their

investment at contract value. Contract value represents contributions made to the fund, plus earnings, less participant withdrawals.

The JPMorgan Stable Asset Income Fund is a common/collective trust fund that is considered to be a stable value fund with underlying investments in investment contracts and is valued at fair value and then adjusted by the issuer to contract value. Fair value of the stable value fund is the net asset value of its underlying investments and contract value is principal plus accrued interest. Individual participant accounts invested in the common/collective trust fund are maintained on a unit value basis. Participants do not have beneficial ownership in specific underlying securities or other assets in the various funds, but have an interest therein represented by units valued as of the last business day of the period. The JPMorgan Stable Asset Income Fund is a stable value fund that is a common/collective trust fund operated and maintained by JPMorgan Chase Bank, N.A. The fund invests in synthetic guaranteed investment contracts, U.S. treasury and agency securities, and cash and cash equivalents, including money market instruments. Participants can ordinarily direct the withdrawal or transfer of all or a portion of their investment at contract value. Contract value represents contributions made to the fund, plus earnings, less participant withdrawals and administrative expenses.

Purchases and sales of securities are recorded on a trade-date basis. Interest income is recorded on the accrual basis. Dividends are recorded on the ex-dividend date.

In accordance with Generally Accepted Accounting Principles (GAAP), the stable value funds are included at fair value in participant-directed investments in the statements of net assets available for benefits and an additional line item showing an adjustment from fair value to contract value. The statement of changes in net assets available for benefits is presented on a contract value basis.

Management fees and operating expenses charged to the Plan for the Plan's investments are deducted from income earned on a daily basis and are not separately reflected. Consequently, management fees and operating expenses are reflected as a reduction of investment return for such investments.

Unit Values - Individual participant accounts for the common/collective trust funds are maintained on a unit value basis. Participants do not have beneficial ownership in the specific underlying securities or other assets in the funds, but do have an interest therein represented by units valued daily. The funds earn dividends and interest which are automatically reinvested in additional units. Generally, contributions to and withdrawals from each fund are converted to units by dividing the amounts of such transactions by the unit values as last determined, and the participants' accounts are charged or credited with the number of units properly attributable to each participant.

Administrative Expenses - Administrative expenses of the Plan are paid by either the Plan or the Company, as provided in the Plan document.

Payment of Benefits - Benefits payments to participants are recorded upon distribution.

New Accounting Standards Adopted - The accounting standards initially adopted in the 2009 financial statements described below affected certain note disclosures but did not impact the

statements of net assets available for benefits or the statement of changes of net assets available for benefits.

Accounting Standards Codification - The Financial Accounting Standards Board's (FASB) Accounting Standards Codification (ASC) became effective on July 1, 2009. At that date, the ASC became FASB's official source of authoritative GAAP applicable to all public and nonpublic nongovernmental entities, superseding existing guidance issued by the FASB, the American Institute of Certified Public Accountants (AICPA), the Emerging Issues Task Force (EITF) and other related literature. The FASB also issues Accounting Standards Updates (ASU). An ASU communicates amendments to the ASC. An ASU also provides information to help a user of GAAP understand how and why GAAP is changing and when the changes will be effective.

Updates to Fair Value Measurements and Disclosures - In 2009, FASB Staff Position 157-4, *Disclosures Determining Fair Value When the Volume and Level of Activity for the Asset or Liability Have Significantly Decreased and Identifying Transactions That Are Not Orderly* (FSP), was issued and later codified into ASC 820, which expanded disclosures and required that major category for debt and equity securities in the fair value hierarchy table be determined on the basis of the nature and risks of the investments.

In September 2009, the FASB issued ASU No. 2009-12, *Fair Value Measurements and Disclosures: Investments in Certain Entities That Calculate Net Asset per Share (or Its Equivalent)* ("ASU 2009-12"), which amended ASC Subtopic 820-10, *Fair Value Measurements and Disclosures — Overall*. ASU No. 2009-12 is effective for the first reporting period ending after December 15, 2009. ASU No. 2009-12 expands the required disclosures for certain investments with a reported net asset value (NAV). ASU No. 2009-12 permits, as a practical expedient, an entity holding

investments in certain entities that calculate net asset value per share or its equivalent for which the fair value is not readily determinable, to measure the fair value of such investments on the basis of that net asset value per share or its equivalent without adjustment. The ASU requires enhanced disclosures about the nature and risks of investments within its scope. Such disclosures include the nature of any restrictions on an investor's ability to redeem its investments at the measurement date, any unfunded commitments, and the investment strategies of the investee. The Plan has adopted ASU No. 2009-12 on a prospective basis for the year ended December 31, 2009. Adoption did not have a material impact on the fair value determination and disclosure of applicable investments. The effect of the adoption of the ASU had no impact on the statements of net assets available for benefits and statement of changes in net assets available for benefits.

Derivatives and Hedging - ASC 815 (originally issued as FASB Statement No. 161, *Disclosures about Derivative Instruments and Hedging Activities — an amendment of FASB Statement No. 133*) was issued March 19, 2008, and is effective for fiscal years beginning after November 15, 2008. ASC 815 expands the required disclosures about an entity's derivative instruments and hedging activities. The Plan currently holds no derivative instruments and engages in no hedging activities. Therefore, this standard had no effect on the Plan's disclosures.

New Accounting Standards to Be Adopted -

ASU No. 2010-06, Fair Value Measurements and Disclosures - In January 2010, the FASB issued ASU No. 2010-06, *Fair Value Measurements and Disclosures* (ASU No. 2010-06), which amends ASC 820 (originally issued as FASB Statement No. 157, *Fair Value Measurements*),

adding new disclosure requirements for Levels 1 and 2, separate disclosures of purchases, sales, issuances, and settlements relating to Level 3 measurements and clarification of existing fair value disclosures. ASU No. 2010-06 is effective for periods beginning after December 15, 2009, except for the requirement to provide Level 3 activity of purchases, sales, issuances, and settlements on a gross basis, which will be effective for fiscal years beginning after December 15, 2010. The Plan is currently evaluating the impact ASU No. 2010-06 will have on the financial statements.

3. FAIR VALUE OF INVESTMENTS

ASC 820, *Fair Value Measurements and Disclosures*, established a single authoritative definition of fair value, set a framework for measuring fair value, and requires additional disclosures about fair value measurements. In accordance with ASC 820, the Plan classifies its investments into Level 1, which refers to securities valued using quoted prices from active markets for identical assets; Level 2, which refers to securities not traded on an active market but for which observable market inputs are readily available; and Level 3, which refers to securities valued based on significant unobservable inputs. Assets are classified in their entirety based on the lowest level of input that is significant to the fair value measurement. The following tables set forth by level within the fair value hierarchy a summary of the Plan's investments measured at fair value on a recurring basis at December 31, 2009 and 2008.

In accordance with the update to ASC 820 (originally issued as FSP 157-4), the table below includes the major categorization for debt and equity securities on the basis of the nature and risk of the investments at December 31, 2009.

	Total December 31, 2009	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Company common stock	\$ 67,259,761	\$ 67,259,761	\$ -	\$ -
Mutual funds:				
US equity funds	123,852,378	123,852,378	-	-
International equity funds	23,982,170	23,982,170	-	-
Asset allocation funds	75,818,774	75,818,774	-	-
Bond funds	23,860,959	23,860,959	-	-
Total mutual funds	<u>247,514,281</u>	<u>247,514,281</u>	<u>-</u>	<u>-</u>
Common/collective trust funds:				
Equity index fund	1,229,720	-	1,229,720	-
Fixed income funds	41,214,547	-	41,214,547	-
Total common/collective trust funds	<u>42,444,267</u>	<u>-</u>	<u>42,444,267</u>	<u>-</u>
Brokerage account: (a)				
Common stocks	2,526,349	2,526,349	-	-
Mutual funds	2,188,844	2,188,844	-	-
Cash equivalents	1,653,565	1,653,565	-	-
Company common stock	68,835	68,835	-	-
Other	152,953	-	152,953	-
Total brokerage account	<u>6,590,546</u>	<u>6,437,593</u>	<u>152,953</u>	<u>-</u>

Participant loans		8,600,308		–		–		8,600,308
Total Investments	\$	372,409,163	\$	321,211,635	\$	42,597,220	\$	8,600,308

(a) The brokerage account is invested in a variety of categories of common stocks, mutual funds and other investments as directed by participants.

		Total December 31, 2008	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Company common stock	\$	53,105,785	\$ 53,105,785	\$ –	\$ –
Mutual funds		100,737,069	100,737,069	–	–
Common/collective trust fund		16,624,789	–	16,624,789	–
Brokerage account		2,304,177	–	2,304,177	–
Participant loans		5,553,231	–	–	5,553,231
Total Investments	\$	178,325,051	\$ 153,842,854	\$ 18,928,966	\$ 5,553,231

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The table below sets forth a summary of changes in the fair value of the Plan's level 3 assets for the year ended December 31, 2009.

		Participant Loans
Balance, beginning of year	\$	5,553,231
Issuances and settlements, net		1,083,365
Transfer from GMO Plan		1,963,712
Balance, end of year	\$	8,600,308

The valuation methods as described in Note 2 may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, although the Plan believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

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4. INVESTMENTS

The Plan's investments that represented five percent or more of the Plan's net assets available for benefits as of December 31, 2009 and 2008 are as follows:

		2009	December 31,	2008
Great Plains Energy Incorporated Common Stock, 3,468,786 and 2,747,265 shares, respectively	* \$	67,259,761	* \$	53,105,785
JPMorgan Stable Value Asset Income Fund, 71,609 shares		27,243,308		–
Fidelity Managed Income Portfolio, 17,521,563 units		**		16,624,789
Fidelity Puritan Fund, 1,176,009 shares		**		15,358,675
Fidelity Magellan Fund, 284,149 shares		**		13,031,069
American Funds Growth Fund of America, 463,072 shares		**		9,465,190
Fidelity Diversified International Fund, 425,966 shares		**		9,162,528

* Nonparticipant-directed (see Note 5)

** As of December 31, 2009, investment did not represent 5% of net assets available for benefits

During 2009, the Plan's investments (including gains and losses on investments bought and sold, as well as held during the year) increased in value by \$51,987,116 as follows:

Mutual funds -		
US equity funds	\$	29,336,918
International equity funds		4,940,851

Asset allocation funds	11,762,536
Bond funds	1,147,792
Total mutual funds	<u>47,188,097</u>
Common/collective trust funds:	
Equity index fund	106,078
Fixed income funds	562,070
Total common/collective trust funds	<u>668,148</u>
Brokerage account	1,133,815
Company common stock	2,997,056
Net appreciation in fair value	\$ <u><u>51,987,116</u></u>

5. NONPARTICIPANT-DIRECTED INVESTMENTS

Information about the net assets and the significant components of the changes in net assets relating to the nonparticipant-directed investments is as follows as of December 31, 2009 and 2008, and for the year ended December 31, 2009. Great Plains Energy Incorporated Common Stock is considered to be nonparticipant-directed for purposes of this disclosure as the participant-directed and nonparticipant-directed amounts cannot be separately determined.

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	<u>2009</u>	<u>2008</u>
Net assets -		
Great Plains Energy Incorporated Common Stock	\$ 67,259,761	\$ 53,105,785
Changes in Net Assets:		<u>Year Ended December 31, 2009</u>
Contributions	\$	6,801,342
Interest and dividends		2,766,417
Dividend distributions		(110,508)
Net appreciation in fair value of investments		2,997,056
Benefits paid to participants		(3,022,075)
Transfer from GMO Plan		6,676,953
Transfers to participant-directed investments		(4,263,480)
Transfers from participant-directed investments		2,308,271
	\$	<u><u>14,153,976</u></u>

6. EXEMPT PARTY-IN-INTEREST TRANSACTIONS

Certain Plan investments are shares of mutual funds, units in a common/collective trust fund, a brokerage account and shares of Company stock managed by Fidelity Investments. Fidelity served as the trustee of the Plan through June 30, 2009, and, therefore, these transactions qualify as party-in-interest transactions. Effective July 1, 2009, Fidelity was removed as recordkeeper and trustee for the Plan and JP Morgan Retirement Plan Services and JPMorgan Chase Bank N.A. were respectively appointed and confirmed as successor recordkeeper and trustee of the Plan. Certain Plan investments are shares of mutual funds, units in a common/collective trust fund, a brokerage account and shares of Company stock managed by JP Morgan, therefore, these transactions qualify as party-in-interest transactions.

As of December 31, 2009 and 2008, respectively, the Plan held 3,468,786 and 2,747,265 shares of common stock of Great Plains Energy Incorporated, the sponsoring employer. During the year ended December 31, 2009, the Plan recorded dividend income from the stock of \$2,591,630.

7. PLAN TERMINATION

Although it has not expressed any intent to do so, the Company has the right under the Plan to discontinue its contributions at any time and to terminate the Plan subject to the provisions of ERISA. In the event of Plan termination, the participants would become 100% vested in their Company matching contributions.

8. FEDERAL INCOME TAX STATUS

The Internal Revenue Service has determined and informed the Company by a letter dated June 4, 2004, that the Plan and related trust are designed in accordance with applicable sections of the IRC. Although the Plan has been amended since receiving the determination letter, the Plan administrator believes that the Plan is designed and is currently being operated in compliance with the applicable requirements of the IRC. Therefore, no provision for income taxes has been included in the Plan's financial statements.

9. NET ASSET VALUE (NAV) PER SHARE

In accordance with ASU No. 2009-12, the Plan expanded its disclosures to include the category, fair value, redemption frequency, and redemption notice period for those assets whose fair value is estimated using the net asset value per share as of December 31, 2009.

The following table for December 31, 2009, sets forth a summary of the Plan's investments with a reported NAV.

Investment	Fair Value *	Redemption Frequency	Other Redemption Restrictions	Redemption Notice Period
SSgA S&P 500 Index NL-C Fund (a)	\$1,229,720	Daily	None	None
JPMorgan Stable Asset Income Fund (b)	27,243,308	Daily (b)	None	None (b)
Fidelity Managed Income Portfolio (c)	13,971,239	(c)	(c)	(c)
Total	<u>\$42,444,267</u>			

*The fair values of the investments have been estimated using the net asset value of the investment.

(a) Equity index fund strategy that seeks to replicate the movements of the Standards & Poor's (S&P) 500 Index, regardless of market conditions.

(b) The fund strategies seek current income while maintaining stability of invested principal. The fund invests in synthetic guaranteed investment contracts, U.S. Treasury and agency securities, and cash and cash equivalents, including money market instruments. The Plan is required to give notice one year in advance of a partial or total liquidation of the investment for any purpose other than for benefit payments and participant-directed investment transfers.

(c) The portfolio strategies seek to preserve capital and to provide a competitive level of income over time. The portfolio invests in fixed-income securities, bond funds, futures contracts, and money market funds. On May 15, 2009, the Plan gave timely notice to Fidelity to liquidate its investment in this fund effective July 2, 2010 in order to transfer the assets to other investment options as directed by participants, or if not directed by participants, to the JPMorgan Stable Asset Income Fund.

10. RECONCILIATION OF FINANCIAL STATEMENTS TO FORM 5500

The following is a reconciliation of net assets available for benefits as of December 31, 2009, per the financial statements to the Form 5500:

	<u>2009</u>
Net assets available for benefits per the financial statements	\$ 373,909,098
Adjustment from contract value to fair value for fully benefit-responsive stable value funds	<u>(1,426,020)</u>
Net assets available for benefits per Form 5500	<u>\$ 372,483,078</u>
Net increase in net assets per the financial statements	\$ 61,016,878
Change in fair value for fully benefit-responsive stable value funds	<u>(529,246)</u>
Net increase in net assets per Form 5500	<u>\$ 60,487,632</u>

11. SUBSEQUENT EVENTS

Effective January 1, 2010, the Plan was amended to invest matching contributions in a target date fund appropriate to the participant's age unless the participant makes an affirmative election for a different investment option(s).

GREAT PLAINS ENERGY INCORPORATED
401(k) SAVINGS PLAN

FORM 5500, SCHEDULE H, PART IV, LINE 4i - SCHEDULE OF ASSETS (HELD AT END OF YEAR)
DECEMBER 31, 2009

(a)	(b)	(c)	(d)	(e)
	Identity of Issue, Borrower, Lessor or Similar Party	Description of Investment Including Maturity Date, Rate of Interest, Collateral, Par or Maturity Value	Cost	Current Value
*	Great Plains Energy Incorporated	Common stock	\$ 83,407,667	\$ 67,259,761
*	JPMorgan Stable Asset Income Fund	Common/Collective Trust Fund	**	27,243,308
	Artisan Mid Cap Fund-Investor Class	Registered Investment Company	**	18,107,356
	American Funds Growth Fund of America R5	Registered Investment Company	**	17,932,808
*	Fidelity Puritan Fund	Registered Investment Company	**	16,581,954
*	Fidelity Magellan Fund	Registered Investment Company	**	15,892,268
*	Fidelity Diversified International Fund	Registered Investment Company	**	14,759,135
*	Fidelity Managed Income Portfolio	Common/Collective Trust Fund	**	13,971,239
	American Century Livestrong 2025	Registered Investment Company	**	13,478,297
	American Funds Fundamental Investors R5 Fund	Registered Investment Company	**	12,876,252
	PIMCO Total Return Fund-Inst Class	Registered Investment Company	**	11,945,835
	American Century Livestrong 2015	Registered Investment Company	**	11,301,410
	American Century Livestrong 2035	Registered Investment Company	**	8,230,330
*	Fidelity Capital Appreciation Fund	Registered Investment Company	**	7,873,463
	American Century Small Cap Value Fund	Registered Investment Company	**	7,626,764
	American Century Livestrong Income Fund	Registered Investment Company	**	6,551,156
	American Century Livestrong 2020	Registered Investment Company	**	6,196,840
	Vanguard Extended Market Index Fund	Registered Investment Company	**	6,009,418
	Vanguard Intermediate Bond Index Fund	Registered Investment Company	**	5,173,997
	American Beacon Large Cap Value Inv Fund	Registered Investment Company	**	4,986,721
	American Century Livestrong 2030	Registered Investment Company	**	4,825,933
	T. Rowe Price Equity Income Fund	Registered Investment Company	**	4,708,237
	Davis NY Venture Fund	Registered Investment Company	**	4,365,019
	American Century International Growth Inv Fund	Registered Investment Company	**	4,327,090
*	Fidelity Small Cap Stock Fund	Registered Investment Company	**	4,096,305
	American Century Livestrong 2045	Registered Investment Company	**	3,865,504
*	Fidelity Low-Priced Stock Fund	Registered Investment Company	**	3,764,274

(Continued)

GREAT PLAINS ENERGY INCORPORATED
401(k) SAVINGS PLAN

FORM 5500, SCHEDULE H, PART IV, LINE 4i - SCHEDULE OF ASSETS (HELD AT END OF YEAR)
DECEMBER 31, 2009

(a)	(b)	(c)	(d)	(e)
	Identity of Issue, Borrower, Lessor or Similar Party	Description of Investment Including Maturity Date, Rate of	Cost	Current Value

	Interest, Collateral, Par or Maturity Value		
Vanguard Morgan Growth Adm Fund	Registered Investment Company	**	3,728,578
American Century Equity Index Institutional Fund	Registered Investment Company	**	3,381,550
Vanguard Inflation-Protection Securities Fund	Registered Investment Company	**	3,335,897
Harbor International Fund – Institutional	Registered Investment Company	**	2,769,540
Managers Special Equity Fund	Registered Investment Company	**	2,691,797
* JPMorgan Core Plus Bond Select Fund	Registered Investment Company	**	2,514,230
Hotchkis & Wiley Mid-Cap Value Fund	Registered Investment Company	**	2,422,892
American Funds Balanced Fund	Registered Investment Company	**	2,273,213
American Century Livestrong 2040	Registered Investment Company	**	2,117,251
Morgan Stanley Institutional Emerging Markets I Portfolio	Registered Investment Company	**	2,022,042
* Fidelity Spartan 500 Equity Index Investment Fund	Registered Investment Company	**	1,529,770
American Beacon Small Cap Value Fund	Registered Investment Company	**	1,250,807
SSgA S&P 500 Index NL-C Fund	Common/Collective Trust Fund	**	1,229,720
Vanguard High-Yield Corporate-Admiral Fund	Registered Investment Company	**	707,671
Perkins Mid Cap Value Fund-I	Registered Investment Company	**	499,239
American Century Livestrong 2050	Registered Investment Company	**	396,886
Goldman Sachs High Yield A Fund	Registered Investment Company	**	183,329
* Fidelity Spartan Extended Market Fund	Registered Investment Company	**	108,860
* Fidelity Spartan International Index Fund	Registered Investment Company	**	104,363
* CISC Brokerage Account	Brokerage Account	**	6,590,546
* Participant Loans	Various participants, interest rates ranging from 6.0% to 11.5% maturing through 2023	**	8,600,308
			<u>\$ 372,409,163</u>

* Represents party-in-interest to the Plan.

** Cost information is not required for participant-directed investments and, therefore, is not included.

(Concluded)

**GREAT PLAINS ENERGY INCORPORATED 401(k)
SAVINGS PLAN**

**FORM 5500, SCHEDULE H, PART IV, LINE 4j —
SCHEDULE OF REPORTABLE TRANSACTIONS FOR THE YEAR ENDED DECEMBER 31, 2009**

(a) Identity of Party involved	(b) Description of Asset (Include Interest Rate and Maturity In Case of a Loan)	(c) Purchase Price	(d) Selling Price	(f) Expense Incurred		(g) Cost of Asset	(h) Current Value of Asset on Transaction Date	(i) Net Gain or Loss
				With Transaction Rental				

SINGLE TRANSACTIONS

**SERIES IN SAME
SECURITY**

*Great Plains Energy Incorporated	Common Stock							
	Purchases	\$12,057,281				\$12,057,281	\$12,057,281	
	Sales		\$7,455,041			10,635,443	7,455,041	\$(3,180,402)

* Represents a party-in-interest to the Plan.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Administrative Committee of the Great Plains Energy Incorporated 401(k) Savings Plan has duly caused this annual report to be signed on its behalf by the undersigned hereunto duly authorized.

GREAT PLAINS ENERGY INCORPORATED 401(k) SAVINGS PLAN

By: /s/ Michael W. Cline
Michael W. Cline

By: /s/ Heather A. Humphrey
Heather A. Humphrey

By: /s/ Todd A. Kobayashi
Todd A. Kobayashi

By: /s/ John R. Marshall
John R. Marshall

By: /s/ Lori A. Wright
Lori A. Wright

June 10, 2010

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement No. 333-132828 and 333-147939 on Form S-8 of our report dated June 10, 2010, relating to the financial statements and financial statement schedules of Great Plains Energy Incorporated 401(k) Savings Plan, appearing in this Annual Report on Form 11-K of the Great Plains Energy Incorporated 401(k) Savings Plan for the year ended December 31, 2009.

/s/ DELOITTE & TOUCHE LLP

Kansas City, Missouri

June 10, 2010