

---

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

---

POST-EFFECTIVE AMENDMENT NO.1  
TO REGISTRATION STATEMENT ON  
FORM S-8

---

REGISTRATION STATEMENT UNDER  
THE SECURITIES ACT OF 1933

---

**GREAT PLAINS ENERGY INCORPORATED**  
(Exact name of Registrant as specified in its charter)

**Missouri**  
(State or other jurisdiction of  
incorporation or organization)

43-1916803  
(I.R.S. Employer  
Identification No.)

**1201 Walnut Street**  
**Kansas City, Missouri 64106**  
**(816) 556-2200**  
(Address, Including Zip Code, and Telephone Number, Including Area Code,  
of Registrant's Principal Executive Offices)

---

KCP&L Greater Missouri Operations Company Retirement Investment Plan  
(formerly known as Aquila, Inc. Retirement Investment Plan)  
(Full title of the Plan)

**MARK G. ENGLISH**  
**ASSISTANT GENERAL COUNSEL AND ASSISTANT SECRETARY**  
**1201 WALNUT STREET**  
**KANSAS CITY, MISSOURI 64106-2124**

(Name, Address, Including Zip Code, and Telephone Number,  
Including Area Code, of Agent for Service)

---

**DEREGISTRATION OF UNSOLD SECURITIES**

On July 14, 2008, Great Plains Energy Incorporated ("Great Plains Energy") filed a Registration Statement on Form S-8 (registration no. 333-152314), registering 1,000,000 shares of Great Plains Energy common stock for issuance under the Aquila, Inc. Retirement Investment Plan (subsequently renamed as the KCP&L Greater Missouri Operations Company Retirement Investment Plan) (the "GMO Plan").

Effective July 1, 2009, the GMO Plan merged into the Great Plains Energy Incorporated 401(k) Savings Plan (formerly known as the Great Plains Energy Incorporated Cash or Deferred Arrangement ("Employee Savings Plus")), with the latter Plan surviving. As a result of the merger, Great Plains Energy has terminated all offerings of its securities under the referenced Registration Statement. Accordingly, pursuant to the undertakings contained in the Registration statement to remove from registration, by means of a Post-Effective Amendment, any of the securities being registered which remain unsold at the termination of the offerings, Great Plains Energy is filing this Post-Effective Amendment to the Registration Statement to deregister the 354,450 shares of its common stock registered and reserved for issuance under the Registration Statement which remained unissued as of July 1, 2009.

---

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, and Rule 478 thereunder, the Registrant has duly caused this Post-Effective Amendment to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Kansas City, State of Missouri, on this 21st day of July, 2009.

**GREAT PLAINS ENERGY INCORPORATED**

By: /s/ Michael J. Chesser  
Name: Michael J. Chesser  
Title: Chairman of the Board and Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
/s/ Michael J. Chesser Michael J. Chesser	Chairman of the Board and Chief Executive Officer (Principal Executive Officer)	July 21, 2009
/s/ Terry Bassham Terry Bassham	Executive Vice President – Finance and Strategic Development and Chief Financial Officer (Principal Financial Officer)	July 21, 2009
/s/ Lori A. Wright Lori A. Wright *	Controller (Principal Accounting Officer) Director	July 21, 2009 July 21, 2009
David L. Bodde *	Director	July 21, 2009
William H. Downey *	Director	July 21, 2009
Randall C. Ferguson, Jr. *	Director	July 21, 2009
James A. Mitchell		
<hr/>		
* William C. Nelson	Director	July 21, 2009
* Linda H. Talbott	Director	July 21, 2009
* Robert H. West	Director	July 21, 2009

\*By: /s/ Michael J. Chesser  
Michael J. Chesser  
Attorney-in-Fact

Exhibit Index

Exhibit No.	Description
24.1	* Powers of Attorney (filed as Exhibit 24.1 to Form S-8 Registration Statement (File No. 333-152314 filed on July 14, 2008).

\* Previously filed.

