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

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**FORM 8-A**

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**FOR REGISTRATION OF CERTAIN CLASSES OF SECURITIES  
PURSUANT TO SECTION 12(b) OR 12(g) OF THE  
SECURITIES EXCHANGE ACT OF 1934**

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**GREAT PLAINS ENERGY INCORPORATED**

(Exact name of registrant as specified in its charter)

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

**43-1916803**  
(IRS Employer Identification No.)

**1200 Main Street  
Kansas City, Missouri 64105**  
(Address and zip code of  
principal executive offices)

**Registrant's telephone number, including area code: (816) 556-2200**

Securities registered pursuant to Section 12(b) of the Act:

Title of each class to be so registered  
**Depository Shares, each representing a 1/20<sup>th</sup> interest in a share of 7.00%  
Series B Mandatory Convertible Preferred Stock**

Name of each exchange on which  
each class is to be registered  
**New York Stock Exchange**

If this form relates to the registration of a class of securities pursuant to Section 12(b) of the Exchange Act and is effective pursuant to General Instruction A. (c), please check the following box.

If this form relates to the registration of a class of securities pursuant to Section 12(g) of the Exchange Act and is effective pursuant to General Instruction A.(d), please check the following box.

**Securities Act registration statement file number to which this form relates (if applicable): File No. 333-202692**

**Securities registered pursuant to Section 12(g) of the Act: None**

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**Item 1. Description of Registrant’s Securities to be Registered.**

The securities to be registered hereby are Depositary Shares, each representing a 1/20<sup>th</sup> interest in a share of 7.00% Series B Mandatory Convertible Preferred Stock (the “Mandatory Convertible Preferred Stock”), of Great Plains Energy Incorporated (the “Registrant”). The information required by this Item 1 is incorporated by reference to the descriptions of the Mandatory Convertible Preferred Stock and the Depositary Shares under the captions “Description of Mandatory Convertible Preferred Stock” and “Description of Depositary Shares” in the Registrant’s prospectus supplement, dated September 27, 2016, filed with the Securities and Exchange Commission (the “SEC”) on September 29, 2016 pursuant to Rule 424(b), pursuant to the Registrant’s Post-Effective Amendment No. 1 to Registration Statement on Form S-3 filed with the SEC on September 27, 2016 (File No. 333-202692).

**Item 2. Exhibits.**

<u>Exhibit No.</u>	<u>Description</u>
3.1	Articles of Incorporation of Great Plains Energy Incorporated, as amended effective September 26, 2016 (Exhibit 3.1 to Form 8-K filed on September 26, 2016).
3.2	Amended and Restated By-laws of Great Plains Energy Incorporated, as amended December 10, 2013 (Exhibit 3.1 to Form 8-K filed on December 16, 2013).
3.3	Certificate of Designations of the 7.00% Series B Mandatory Convertible Preferred Stock of Great Plains Energy Incorporated, filed with the Secretary of State of the State of Missouri and effective September 30, 2016 (Exhibit 3.1 to Form 8-K filed on October 3, 2016).
4.1	Form of Certificate for the 7.00% Series B Mandatory Convertible Preferred Stock (included in Exhibit 3.3 hereto).
4.2	Deposit Agreement, dated as of October 3, 2016, among Great Plains Energy Incorporated and Computershare Inc. and Computershare Trust Company, N.A., as joint depository, on behalf of all holders from time to time of the receipts issued thereunder (Exhibit 4.2 to Form 8-K filed on October 3, 2016).
4.3	Form of Depositary Receipt for the Depositary Shares (Exhibit 4.2 to Form 8-K filed on October 3, 2016).

**SIGNATURE**

Pursuant to the requirements of Section 12 of the Securities Exchange Act of 1934, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereto duly authorized.

**GREAT PLAINS ENERGY INCORPORATED**

Date: October 3, 2016

By: /s/ Lori A. Wright

Name: Lori A. Wright

Title: Vice President—Corporate Planning, Investor Relations and  
Treasurer

## Exhibit Index

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