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

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**FORM S-8**  
REGISTRATION STATEMENT UNDER THE  
SECURITIES ACT OF 1933

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**USEC INC.**

(Exact Name of Registrant as Specified in its Charter)

**Delaware**  
(State of Incorporation)

**52-2107911**  
(I.R.S. Employer Identification No.)

**2 Democracy Center  
6903 Rockledge Drive  
Bethesda, MD 20817**  
(Address of Principal Executive Offices)(Zip Code)

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**USEC Savings Program**  
(Full Title of the Plan)

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**Ellen C. Wolf**  
**Senior Vice President and Chief Financial Officer**  
**USEC Inc.**  
**2 Democracy Center**  
**6903 Rockledge Drive**  
**Bethesda, MD 20817**  
**(301) 564-3200**  
(Name, Address and Telephone Number of Agent for Service)

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CALCULATION OF REGISTRATION FEE

Title of Securities To Be Registered	Amount To Be Registered (1)(2)	Proposed Maximum Offering Price Per Share (3)	Proposed Maximum Aggregate Offering Price (3)	Amount of Registration Fee (3)
Common Stock, par value \$.10 per share	1,000,000 shares	\$9.85	\$9,850,000	\$1,159.35

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(1) In addition, pursuant to Rule 416(c) under the Securities Act of 1933, this registration statement also covers an indeterminate amount of interests to be offered or sold pursuant to the USEC Savings Program. Pursuant to Rule 452(h)(2) under the Securities Act, no filing fee is payable with respect to these interests.

(2) If, as a result of stock splits, stock dividends or similar transactions, the number of securities purported to be registered by this registration statement changes, the provisions of Rule 416 under the Securities Act of 1933 shall apply to this registration statement, and this registration statement shall be deemed to cover the additional securities resulting from the split of, or the dividend on, the securities covered by this registration statement.

(3) Pursuant to Rule 457(h) of the Securities Act of 1933, and solely for the purpose of calculating the registration fee, the proposed maximum offering price per share is based on the average of the high and low sales prices of USEC's Common Stock on the New York Stock Exchange on October 28, 2005.

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## INCORPORATION BY REFERENCE OF PRIOR REGISTRATION STATEMENT

This registration statement on Form S-8 is filed by USEC Inc. pursuant to General Instruction E to Form S-8 to register an additional 1,000,000 shares of Common Stock which may be offered and sold to participants under the USEC Savings Program (the "Program"). The contents of the registration statement on Form S-8, file number 333-101094, previously filed by USEC and relating to the registration of shares of Common Stock for issuance under the Program, are hereby incorporated by reference to this registration statement in accordance with General Instruction E to Form S-8 except for Part II, Item 6 of such registration statement, which is updated and restated below.

## PART II

### INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

#### Item 6. Indemnification of Directors and Officers.

Section 145 of the General Corporation Law of the State of Delaware (the "DGCL") empowers a Delaware corporation to indemnify any person who was or is a party to or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation) by reason of the fact that such person is or was a director, officer, employee or agent of such corporation, or is or was serving at the request of such corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise. The indemnity may include expenses (including attorney's fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding, provided that such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe such person's conduct was unlawful.

A Delaware corporation may indemnify directors, officers, employees and other agents of such corporation in an action by or in the right of the corporation under the same conditions, except that no indemnification shall be made if such person is adjudged to be liable to the corporation unless, and only to the extent that, a court determines that such person fairly and reasonably is entitled to indemnity for expenses the court deems proper in light of liability adjudication. Where a director, officer, employee or agent of the corporation is successful on the merits or otherwise in the defense of any action, suit or proceeding referred to in this Item 6 or in defense of any claim, issue or matter herein, the corporation must indemnify such person against the expenses (including attorney's fees) which he or she actually and reasonably incurred in connection therewith.

Both our Bylaws and Certificate of Incorporation require us to indemnify each of our directors and officers to the fullest extent permitted by law, subject to certain exceptions, in connection with any actual or threatened action or proceeding arising out of his or her service to us or to other organizations at our request.

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As permitted by Section 102(b)(7) of the DGCL, our Certificate of Incorporation also contains a provision eliminating the personal liability of a director to USEC Inc. or our shareholders for monetary damages for breach of fiduciary duty as a director, subject to certain exceptions.

In addition to indemnification provided for in our Certificate of Incorporation and Bylaws, we have entered into indemnification agreements with our directors and executive officers. We intend to enter into indemnification agreements with any new directors and executive officers in the future. In addition, we maintain directors' and officers' liability insurance.

**Item 8. Exhibits.**

The following is a list of exhibits filed as part of this registration statement.

<b><u>Exhibit No.</u></b>	<b><u>Description</u></b>
4.1	Certificate of Incorporation of USEC Inc. (incorporated by reference to Exhibit 3.1 to Registration Statement on Form S-1, No. 333-57955, filed June 29, 1998).
4.2	Amended and Restated Bylaws of USEC Inc., dated September 13, 2000 (incorporated by reference to Exhibit 3.2 to Registration Statement on Form S-1, No. 333-57955, filed June 29, 1998).
4.3	Rights Agreement, dated April 24, 2001, between USEC Inc. and Fleet National Bank, as Rights Agent, including the form of Certificate of Designation, Preferences and Rights as Exhibit A, the form of Rights Certificates as Exhibit B and the Summary of Rights as Exhibit C (incorporated by reference to Exhibit 99 to Registration Statement on Form 8-A filed April 24, 2001).
5.1	Internal Revenue Service Determination Letter as to the Plan (incorporated by reference to Exhibit 5.2 to Registration Statement on Form S-8 filed November 8, 2002).
23.1	Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm.
23.2	Consent of Grant Thornton LLP, independent registered public accounting firm.
24.1	Power of Attorney (included on the signature page of this registration statement).

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### SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Bethesda, State of Maryland, on this 2<sup>nd</sup> day of November, 2005.

USEC INC.

By: /s/ John K. Welch

John K. Welch

President and Chief Executive Officer

### POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints John K. Welch, Ellen C. Wolf and Timothy B. Hansen, and each of them, the undersigned's true and lawful attorneys-in-fact and agents, with full power of substitution and revocation, for and in the undersigned's name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement on Form S-8 and to file the same, with all exhibits thereto, and other documents in connection therewith, with the SEC, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done, as fully to all intents and purposes as the undersigned might or could do in person, hereby ratify and confirming all that said attorneys-in-fact and agents or any of them, or their or his substitutes, may lawfully do or cause to be done by virtue thereof.

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Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities indicated on this 2<sup>nd</sup> day of November, 2005.

SIGNATURE

TITLE

/s/ John K. Welch  
John K. Welch

President, Chief Executive Officer and Director  
(Principal Executive Officer)

/s/ Ellen C. Wolf  
Ellen C. Wolf

Senior Vice President and Chief Financial Officer  
(Principal Financial and Accounting Officer)

/s/ James R. Mellor  
James R. Mellor

Chairman of the Board and Director

/s/ Michael H. Armacost  
Michael H. Armacost

Director

/s/ Joyce F. Brown  
Joyce F. Brown

Director

/s/ John R. Hall  
John R. Hall

Director

/s/ W. Henson Moore  
W. Henson Moore

Director

/s/ Joseph F. Paquette, Jr.  
Joseph F. Paquette, Jr.

Director

/s/ James D. Woods  
James D. Woods

Director

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Pursuant to the requirements of the Securities Act of 1933, the persons who administer the USEC Savings Program have duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Bethesda, State of Maryland, on this 2<sup>nd</sup> day of November, 2005.

USEC SAVINGS PROGRAM

By: /s/ Lance Wright

Lance Wright  
Senior Vice President, Human Resources  
and Administration,  
Chair, Benefits Administration Committee

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## **Exhibit Index**

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CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Registration Statement on Form S-8 of our report dated March 11, 2005, except for the restatements described in the third and fifth paragraphs of Note 2 to the consolidated financial statements and the matter described in the penultimate paragraph of Management's Report on Internal Controls Over Financial Reporting, as to which the date is August 3, 2005, relating to the financial statements, management's assessment of the effectiveness of internal control over financial reporting and the effectiveness of internal control over financial reporting, of USEC Inc., which appears in USEC Inc.'s Annual Report on Form 10-K/A for the year ended December 31, 2004.

/s/ PricewaterhouseCoopers LLP  
PricewaterhouseCoopers LLP  
McLean, Virginia  
November 2, 2005

**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We have issued our report dated June 3, 2005, accompanying the financial statements and supplemental schedule on Form-11-K for the year ended December 31, 2004. We hereby consent to the incorporation by reference of said report in this Registration Statement of USEC Inc. on Form S-8.

/s/ Grant Thornton LLP

*Baltimore, Maryland*

*November 2, 2005*