

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

FORM 8-A

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

USEC Inc.

(Exact name of registrant as specified in charter)

Delaware
(State of incorporation
or organization)

52-2107911
(IRS Employer
Identification No.)

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

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

Title of each class to be so registered	Name of each exchange on which each class is to be registered
Preferred Stock Purchase Rights	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), 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), check the following box.

Securities Act registration statement file number to which this form relates: Not applicable
(If applicable)

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

None
(Title of Class)

Item 1. Description of Registrant's Securities to be Registered.

On September 29, 2011, the Board of Directors (the "Board") of USEC Inc. (the "Company") adopted a Tax Benefit Preservation Plan between the Company and Mellon Investor Services LLC, as rights agent (as amended from time to time, the "Tax Plan").

By adopting the Tax Plan, the Board is helping to preserve the value of certain deferred tax benefits, including those generated by net operating losses, "net unrealized built-in losses" and certain other tax attributes (collectively, the "Tax Benefits"). The Company's ability to use these Tax Benefits would be substantially limited if it were to experience an "ownership change" as defined under Section 382 of the Internal Revenue Code of 1986, as amended (the "Code"). In general, an ownership change would occur if there is a greater than 50-percentage point change in ownership of securities by stockholders owning (or deemed to own under Section 382 of the Code) five percent or more of a corporation's securities over a rolling three-year period. The Tax Plan reduces the likelihood that changes in the Company's investor base have the unintended effect of limiting the Company's use of its Tax Benefits. The Board believes it is in the best interest of the Company and its stockholders that the Company provide for the protection of the Tax Benefits by adopting the Tax Plan.

The Tax Plan is intended to act as a deterrent to any person acquiring shares of the Company's securities equal to or exceeding the Trigger Amount (as defined below) without the approval of the Board. This would protect the Tax Benefits because changes in ownership by a person owning less than 4.9% of the Company's stock are not included in the calculation of "ownership change" for purposes of Section 382 of the Code. The Board has established procedures to consider requests to exempt certain acquisitions of the Company's securities from the Tax Plan if the Board determines that doing so would not limit or impair the availability of the Tax Benefits or is otherwise in the best interests of the Company.

The Tax Plan specifying the terms of the Rights (as defined below) and the text of the press release announcing the declaration of the Rights are incorporated herein by reference as exhibits to this registration statement. The following summary provides only a general description of the Tax Plan and is qualified in its entirety by reference to such exhibits.

Dividend of Preferred Stock Purchase Rights

In connection with its adoption of the Tax Plan, the Board declared a dividend of one preferred stock purchase right (individually, a "Right" and collectively, the "Rights") for each share of Common Stock, par value \$.10 (the "Common Stock") of the Company outstanding at the close of business on October 10, 2011 (the "Record Date") and 1,000 Rights for each share of Series C Convertible Participating Preferred Stock, par value \$1.00 per share (the "Series C Preferred" and together with the Common Stock and the Class B Common Stock, par value \$.10 per share (the "Class B Common"), the "Equity Stock") of the Company outstanding at the close of business on the Record Date. The Class B Common has not yet been authorized and would require the approval of the Company's stockholders. As long as the Rights are attached to the Equity Stock, the Company will issue one Right (subject to adjustment) with each new share of the Common Stock and each share of the Class B Common and 1,000 Rights (subject to adjustment) with each new share of Series C Preferred so that all such shares will have attached Rights. When exercisable, each Right will entitle the registered holder to purchase from the Company one one-thousandth of a share of Series A Junior Participating Preferred Stock, par value \$1.00 per share (the "Series A Preferred"), of the Company at a price of \$10.00 per one one-thousandth of a share of Series A Preferred, subject to adjustment (the "Purchase Price").

Transfer, "Flip In" and Exercise of the Rights

The Rights detach from the Equity Stock and become exercisable if: (i) at the close of business on the tenth business day following a public announcement that (A) a person or group of affiliated or associated persons has acquired, or obtained the right to acquire, beneficial ownership of 4.9% or more of the Common Stock or (B) an SPA Investor (as defined in the Tax Plan) or its affiliates or associates has acquired, or obtained the right to acquire, beneficial ownership of 4.9% or more of the Company Stock (as defined in the Tax Plan) (each such person, an "Acquiring Person" and such ownership thresholds, the "Trigger Amount") or (ii) at the close of business on the tenth business day (or such later date as may be determined by action of the Board prior to such time as any person or group of affiliated persons becomes an Acquiring Person) following the commencement or announcement of an intention to make a tender offer or exchange offer the consummation of which would result in the beneficial ownership by a person or group of affiliated or associated persons of shares of Company Stock equal to or exceeding the Trigger Amount (the earlier of (i) and (ii) being called the "Distribution Date"). The Board may postpone the Distribution Date of the rights under certain circumstances.

The Tax Plan provides that any person who beneficially owned shares of Company Stock equal to or exceeding the Trigger Amount immediately prior to the first public announcement of the adoption of the Tax Plan, together with any affiliates and associates of that person (each, an "Existing Holder"), shall not be deemed to be an "Acquiring Person" for purposes of the Tax Plan unless the Existing Holder becomes the beneficial owner of one or more additional shares of Company Stock (other than pursuant to a dividend or distribution paid or made by the Company on the outstanding Company Stock in Company Stock, pursuant to a split or subdivision of the outstanding Company Stock, pursuant to any unilateral grant of any Company Stock by the Company or pursuant to any Excluded Transactions (as defined in the Tax Plan)). However, if upon acquiring beneficial ownership of one or more additional shares of Company Stock, the Existing Holder does not beneficially own shares of Company Stock equal to or exceeding the Trigger Amount, the Existing Holder shall not be deemed to be an "Acquiring Person" for purposes of the Tax Plan.

The Rights will be transferred only with the Equity Stock until the Distribution Date (or earlier redemption, exchange, termination or expiration of the Rights). After the Distribution Date, separate rights certificates will be issued evidencing the Rights and become separately transferable apart from the Equity Stock.

Unless redeemed or exchanged earlier by the Company or terminated, the rights will expire upon the earliest to occur of (i) September 29, 2014, (ii) the close of business on the effective date of the repeal of Section 382 of the Code if the Board determines that the Tax Plan is no longer necessary or desirable for the preservation of the Tax Benefits or (iii) the time at which the Board determines that the Tax Benefits are fully utilized or no longer available under Section 382 of the Code or that an ownership change under Section 382 of the Code would not adversely impact in any material respect the time period in which the Company could use the Tax Benefits, or materially impair the amount of the Tax Benefits that could be used by the Company in any particular time period, for applicable tax purposes.

Rights and Preferences of Preferred Stock

Each share of Series A Preferred purchasable upon exercise of the Rights will be entitled, when, as and if declared, to a minimum preferential quarterly dividend payment of \$1.00 per share or, if greater, an aggregate dividend of 1,000 times the dividend, if any, declared per share of Common Stock. In the event of liquidation, dissolution or winding up of the Company, the holders of the Series A Preferred will be entitled to a minimum preferential

liquidation payment of \$1,000 per share (plus any accrued but unpaid dividends), provided that such holders of the Series A Preferred will be entitled to an aggregate payment of 1,000 times the payment made per share of Common Stock. Except as otherwise provided by law, the holders of the Series A Preferred Stock are not entitled to vote on matters submitted to the stockholders. Finally, in the event of any merger, consolidation or other transaction in which shares of the Equity Stock are exchanged, each share of Series A Preferred will be entitled to receive 1,000 times the amount received per share of Common Stock. The Series A Preferred will not be redeemable. These rights are protected by customary antidilution provisions. Because of the nature of the Series A Preferred's dividend and liquidation rights, the value of one one-thousandth of a share of Series A Preferred purchasable upon exercise of each Right should approximate the economic value of one share of Common Stock.

The Purchase Price payable, and the number of shares of Series A Preferred or other securities or property issuable, upon exercise of the Rights are subject to adjustment from time to time to prevent dilution (i) in the event of a stock dividend on, or a subdivision, combination or reclassification of, the Series A Preferred, (ii) upon the grant to holders of the Series A Preferred of certain rights or warrants to subscribe for or purchase Series A Preferred or convertible securities at less than the then current market price of the Series A Preferred or (iii) upon the distribution to holders of the Series A Preferred of evidences of indebtedness, cash, securities or assets (excluding regular periodic cash dividends at a rate not in excess of 125% of the rate of the last regular periodic cash dividend theretofore paid or, in case regular periodic cash dividends have not theretofore been paid, at a rate not in excess of 50% of the average net income per share of the Company for the four quarters ended immediately prior to the payment of such dividend, or dividends payable in shares of Series A Preferred (which dividends will be subject to the adjustment described in clause (i) above)) or of subscription rights or warrants (other than those referred to above).

Until a Right is exercised, the holder thereof, as such, will have no rights as a stockholder of the Company beyond those as an existing stockholder, including, without limitation, the right to vote or to receive dividends.

Merger, Exchange or Redemption of the Rights

In the event that a Person becomes an Acquiring Person or if the Company were the surviving corporation in a merger with an Acquiring Person or any affiliate or associate of an Acquiring Person and shares of the Equity Stock were not changed or exchanged, each holder of a Right, other than Rights that are or were acquired or beneficially owned by the Acquiring Person (which Rights will thereafter be null and void), will thereafter have the right to receive upon exercise that number of shares of Equity Stock having a market value of two times the then current Purchase Price of the Right. In the event that, after a Person has become an Acquiring Person, the Company were acquired in a merger or other business combination transaction or more than 50% of its assets or earning power were sold, proper provision shall be made so that each holder of a Right shall thereafter have the right to receive, upon the exercise thereof at the then current Purchase Price of the Right, that number of shares of common stock of the acquiring company which at the time of such transaction would have a market value of two times the then current Purchase Price of the Right.

At any time after a Person becomes an Acquiring Person and prior to the earlier of one of the events described in the last sentence of the previous paragraph or the acquisition by such Acquiring Person of 50% or more of the then outstanding Common Stock, the Board may cause the Company to exchange the Rights (other than Rights owned by an Acquiring Person which will have become null and void), in whole or in part, for shares of Equity Stock at an exchange rate of one share of Common Stock or Class B Common or one one-thousandth of a share of Series C Preferred, as applicable, per Right (subject to adjustment).

The Rights may be redeemed in whole, but not in part, at a price of \$.0001 per Right (the "Redemption Price") by the Board at any time prior to the time that an Acquiring Person has become such. The redemption of the Rights may be made effective at such time, on such basis and with such conditions as the Board in its sole discretion may establish. Immediately upon any redemption of the Rights, the right to exercise the Rights will terminate and the only right of the holders of Rights will be to receive the Redemption Price.

Amendment of Tax Benefit Preservation Plan

Any of the provisions of the Tax Plan may be amended by the Board, or a duly authorized committee thereof, for so long as the Rights are then redeemable, and after the Rights are no longer redeemable, the Company may amend or supplement the Tax Plan in any manner that does not adversely affect the interests of the holders of the Rights (other than an Acquiring Person or any affiliate or associate of an Acquiring Person).

Item 2. Exhibits

1. Certificate of Designations of Series A Junior Participating Preferred Stock of USEC Inc. filed with the Secretary of State of the State of Delaware on September 30, 2011 (incorporated by reference to Exhibit 3.2 of the Current Report on Form 8-K dated September 29, 2011 of USEC Inc.).
 2. Tax Benefit Preservation Plan, dated as of September 29, 2011, between USEC Inc. and Mellon Investor Services LLC, which includes the Form of Certificate of Designations of Series A Junior Participating Preferred Stock as Exhibit A, the Form of Right Certificate as Exhibit B and the Summary of Rights to Purchase Preferred Shares as Exhibit C (incorporated by reference to Exhibit 4.1 of the Current Report on Form 8-K dated September 29, 2011 of USEC Inc.).
 3. Press Release of USEC Inc., dated September 30, 2011 (incorporated by reference to Exhibit 99.1 of the Current Report on Form 8-K dated September 29, 2011 of USEC Inc.).
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SIGNATURES

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.

USEC Inc.

Date: September 30, 2011

By:

/s/ John C. Barpoulis

John C. Barpoulis
Senior Vice President and Chief Financial Officer
(Principal Financial Officer)