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

FORM 11-K

For the fiscal year ended December 31, 2009 OR TRANSITION REPORT PURSUANT TO SECTION 15 (d) OF THE SECURITIES EXCHANGE ACT OF 1934

[X] ANNUAL REPORT PURSUANT TO SECTION 15(d) OF

THE SECURITIES EXCHANGE ACT OF 1934

Commission file number 1-14287

USEC Savings Program (Full title of the plan)

USEC Inc. **Two Democracy Center** 6903 Rockledge Drive Bethesda, MD 20817 (301) 564-3200

(Name of issuer of the securities held pursuant to the plan and the address of its principal executive office)



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Report of Independent Registered Public Accounting Firm

To the Benefit Plan Administrative Committee, the Benefit Plan Investment Committee and Participants of the USEC Savings Program:

We have audited the accompanying statements of net assets available for benefits of the USEC Savings Program (the "Plan") as of December 31, 2009 and 2008, and the related statements of changes in net assets available for benefits for the years then ended. 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. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes 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, the financial statements referred to above 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 years then ended in conformity with U.S. GAAP.

Our audit was performed for the purpose of forming an opinion on the basic financial statements taken as a whole. The supplemental schedule of assets (held at end of year) is presented for the purpose of additional analysis and is not a required part of the basic financial statements but is 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. The supplemental schedule is the responsibility of the Plan's management. The supplemental schedule has been subjected to the auditing procedures applied in the audit of the basic financial statements and, in our opinion, is fairly stated in all material respects in relation to the basic financial statements taken as a whole.

/s/ Clark, Schaefer, Hackett & Co.

Cincinnati, Ohio June 22, 2010

Statements of Net Assets Available for Benefits In thousands

	December 31,			
	2009			2008
Assets:				
Investments at fair value	\$	299,045	\$	244,856
Participant loans receivable		5,207		4,750
Net assets available for benefits at fair value		304,252		249,606
Adjustment from fair value to contract value for fully benefit-responsive investment contracts		1,591		4,929
Net assets available for benefits	\$	305,843	\$	254,535

The accompanying notes are an integral part of these financial statements.

Statements of Changes in Net Assets Available for Benefits

In thousands

Years Ended December 31, 2009 2008 Changes in net assets: \$ 9,068 Interest and dividends 5,334 Net appreciation (depreciation) in fair value of investments 35,183 (72,011) Contributions: 19,118 Participants 19,430 Employer 7,908 7,120 Distributions to participants (16,503)(17,776)Administrative expenses (44)(28)Net increase (decrease) 51,308 (54,509) Net assets available for benefits, beginning of year 254,535 309,044 Net assets available for benefits, end of year 305,843 254,535

The accompanying notes are an integral part of these financial statements.

Notes to Financial Statements

1. Plan description:

The following description of the USEC Savings Program (the Plan) provides only general information. Plan participants should refer to the Plan document for a more complete description of the Plan's provisions.

General

The Plan is a defined contribution plan subject to the provisions of the Employee Retirement Income Security Act of 1974, as amended (ERISA). The Plan is administered by USEC Inc. through a plan administrator. USEC Inc. and its wholly owned subsidiary, United States Enrichment Corporation (together USEC), are participating employers. The USEC Benefit Plan Administrative and Investment Committees monitor and oversee administration of the Plan. Fidelity Management Trust Company (the Trustee or FMTC) acts as Trustee and recordkeeper.

Eligibility

An eligible employee is an employee that is paid, employed and reported on the payroll and personnel records of USEC as an employee. An eligible employee may participate in the Plan after one hour of service.

Contributions

Participants may contribute between 1 percent and 50 percent of eligible compensation in 0.5 percent increments up to the maximum annual amount allowed under the Internal Revenue Code. Participants may elect either before-tax contributions, after-tax contributions or a combination of both. Beginning September 1, 2008, with certain limited exceptions, new employees are automatically enrolled in the Plan at a default contribution level of either 5 percent or 6 percent of eligible compensation (depending on the class of employee) unless they make an affirmative election to make contributions at a specified percentage (including zero).

Employees who are eligible to participate in a company pension plan, and elect to do so, receive the Basic Matching Contribution. For each payroll period, USEC provides a 100 percent matching contribution for the first 3 percent of each participant's eligible earnings and a 50 percent matching contribution for the next 2 percent. The maximum Basic Matching Contribution is 4 percent of eligible earnings.

Employees who are not eligible to participate in a company pension plan, or eligible employees who elect not to participate in a company pension plan, receive the Enhanced Matching Contribution. For each payroll period, USEC provides a 200 percent matching contribution for the first 2 percent of the participant's eligible earnings, plus a 100 percent matching contribution for the next 2 percent and a 50 percent matching contribution for the next 2 percent. The maximum Enhanced Matching Contribution is 7 percent of eligible earnings.

The Plan accepts rollover contributions from other qualified plans.

Participant accounts and loans

Each participant's account is credited with the participant's and employer's matching contributions, and the respective investment earnings (losses) of the individual funds. Participants may borrow from the Plan in any amount of at least \$1,000 but less than 50 percent of the participant's vested account balance. A participant cannot borrow more than \$50,000. Loan terms originated under the Plan are for a period not to exceed five years, except for loans taken for the purchase of a primary residence (home loans), which may have terms up to 15 years. Loans are secured by the balance in the participant's account and bear a rate of interest at the prime lending rate plus one percentage point, subject to usury limits, at the date of loan origination with no refinancing option. Principal and interest on the loans are repaid in substantially level installments. Prepayment in full is allowed at any time. As of December 31, 2009, interest rates on outstanding loans ranged from 4.25 percent to 10.5 percent.

Administrative Expenses

Certain expenses of maintaining the Plan are paid by USEC.

Vesting

Participants are immediately vested in their contributions and associated earnings (losses). Plan vesting in the participating employer's matching contributions and associated earnings (losses) is based on years of credited service to USEC, as follows:

Years of credited service	Percentage
Less than 2	0 percent
2	50 percent
3	100 percent

Forfeitures

Forfeitures are employer contributions retained by the Plan when a participant separates from USEC prior to vesting and are used to reduce current or future employer matching contributions. Participant departures prior to vesting resulted in forfeitures of \$69,255 in 2009 and \$19,815 in 2008. In 2009 and 2008, employer contributions were reduced by \$24,913 and \$33,833, respectively, from forfeitures of non-vested accounts. At December 31, 2009 and 2008, forfeitures available to reduce future contributions were \$38,624 and \$5,093, respectively.

Investment options

Participants direct FMTC to invest their contributions, the participating employer's matching contributions and associated earnings (losses) among various investment options. At December 31, 2009, investment options consist of 25 mutual funds, the USEC Stock Fund and a managed fund of short-term bonds and other fixed income securities (the USEC Stable Value Fund). Participant contributions to the USEC Stock Fund are limited to 20 percent of their total contributions and participants are restricted from making additional contributions into the USEC Stock Fund if the balance in their USEC Stock Fund account exceeds 20 percent of their total account value.

Participants may, subject to the USEC Stock Fund restriction, make changes and exchanges among the investment options at any time by contacting FMTC directly.

Distributions

Upon termination of service (other than by death) at a time when a participant (1) has reached normal retirement age (age 65), (2) has reached age 50 with 10 years of credited service, (3) is disabled or (4) is eligible for total and permanent disability benefits under a USEC long-term disability plan, a participant may elect to receive (a) a lump sum amount equal to the value of the participant's vested interest in his or her account, (b) monthly installments over a fixed number of years or over life expectancy or (c) a series of partial payments. If a participant dies before the entire vested portion of the account is distributed, the remaining vested portion of the account is payable to a beneficiary. Upon termination of service (other than by death) before a participant (1) has reached normal retirement age (age 65), (2) has reached age 50 with 10 years of credited service, (3) is disabled or (4) is eligible for total and permanent disability benefits under a USEC long-term disability plan, upon request, the vested portion of a participant's account may be paid as a lump sum. The amount of any payment from a participant's account is reduced to satisfy income tax withholding requirements, unless the balance is rolled over to a qualifying plan or other tax-exempt option.

Participants may make hardship withdrawals from their contributions under certain circumstances allowed by the Plan.

Plan termination

Although USEC has not expressed any intent to do so, USEC has the right to discontinue its contributions at any time and to terminate the Plan, subject to applicable law. In the event of Plan termination, participants will become 100 percent vested in participating employer matching contributions and associated earnings (losses).

2. Summary of significant accounting policies:

Basis of accounting

The financial statements of the Plan are prepared based on the accrual method of accounting. Distributions to participants are recorded on the cash basis.

Investment contracts held by a defined contribution plan are required to be reported at fair value, in accordance with financial accounting standards. However, contract value is the relevant measurement attributed for that portion of the net assets available for benefits of a defined contribution plan attributable to fully benefit-responsive investment contracts, since the contract value is the amount participants would receive if they were to initiate permitted transactions under the terms of the Plan. As required by financial accounting standards, the Statements of Net Assets Available for Benefits present the fair value of the investment contracts as well as the adjustment of the fully benefit-responsive investment contracts from fair value to contract value. The Statements of Changes in Net Assets Available for Benefits are prepared on a contract value basis.

Use of estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires the Plan's management to make estimates and assumptions that affect the reported amounts of assets and liabilities. Actual results could differ from those estimates.

Investment valuation and income recognition

The Plan's investments are stated at fair value. Participant loans are valued at cost, which approximates fair value. Purchases and sales of securities are recorded on a trade-date basis. Dividends are recorded on the ex-dividend date.

Fair value is generally based on quoted closing market prices. Underlying assets of the USEC Stable Value Fund (USVF) are valued at most recent bid prices (sales prices if the principal market for the security is an exchange) if quotations are readily available. Shares of mutual funds are valued at the net asset value of shares held by the Plan at year end. The Statements of Changes in Net Assets Available for Benefits reports the net appreciation or depreciation in the fair value of investments, which consists of the realized gains or losses and the unrealized appreciation or depreciation on those investments, except that the net appreciation or depreciation in the USVF is reported on a contract value basis.

The USVF invests in Managed Income Portfolio II, a collective trust managed by FMTC. The objective of the USVF is to seek the preservation of capital and to provide a competitive level of income over time that is consistent with the preservation of capital. To achieve its investment objective, the USVF invests in assets such as fixed-income securities or bond funds and may include derivative instruments such as futures contracts and swap agreements. The USVF also invests in "wrapper" contracts issued by third-parties and cash equivalents represented by shares in a money market fund. These "wrapper" contracts are immaterial to the financial statements of the Plan. The Plan's interest in the collective trust is based on the fair value of the collective trust's underlying investments as based on information reported by the investment advisor using the audited financial statements of the collective trust at year end.

3. Investments:

The following table presents investments at December 31, 2009 and 2008 that represent 5 percent or more of the Plan's net assets (in thousands):

	December 31,			1,
		2009		2008
USEC Stable Value Fund, at fair value	\$	126,758	\$	121,557
American Funds – The Growth Fund of America - Class R5, 902,043 and 869,270 shares, respectively		24,608		17,768
American Funds – Investment Company of America - Class R5, 737,315 and 728,802 shares, respectively		19,126		15,268
idelity US Bond Index Fund – 1,398,965 shares in 2009 and below 5% in 2008 15,473				
Total individual investments that represent 5 percent or more of the Plan's net assets		185,965		154,593
Other investments and participant loans receivable		118,287		95,013
Total net assets available for benefits at fair value	\$	304,252	\$	249,606

Components of the net appreciation (depreciation) in value of investments for the years ended December 31, 2009 and 2008 are as follows (in thousands):

	 2009	 2008
Mutual funds	\$ 35,325	\$ (71,394)
USEC Inc. common stock	 (142)	 (617)
Net appreciation (depreciation)	\$ 35,183	\$ (72,011)

4. Fair Value Measurements:

Financial accounting standards provide the framework for measuring fair value. That framework provides a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (level 1 measurements) and the lowest priority to unobservable inputs (level 3 measurements). The three levels of the fair value hierarchy are described as follows:

- Level 1: Inputs to the valuation methodology are unadjusted quoted prices for identical assets or liabilities in active markets that the plan has the ability to access.
- Level 2: Inputs to the valuation methodology include:
 - quoted prices for similar assets and liabilities in active markets;
 - quoted prices for identical or similar assets or liabilities in inactive markets;
 - inputs other than quoted prices that are observable for the asset or liability;
 - inputs that are derived principally from or corroborated by observable market data by correlation or other means.

If the asset or liability has a specified (contractual) term, the level 2 input must be observable for substantially the full term of the asset or liability.

Level 3: Inputs to the valuation methodology are unobservable and significant to the fair value measurement.

The asset or liability's fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Valuation techniques used need to maximize the use of observable inputs and minimize the use of unobservable inputs.

Following is a description of the valuation methodologies used for assets measured at fair value. There have been no changes in the methodologies used at December 31, 2009 and 2008.

Level 1 of the valuation hierarchy includes mutual funds for which the Net Asset Value (NAV) and share price, respectively, are quoted in active markets. Mutual funds are public investment instruments valued using the NAV provided by the administrator of the fund. The NAV is based on the underlying assets owned by the fund, minus its liabilities, divided by the number of shares outstanding.

Level 2 of the valuation hierarchy includes investments in a collective trust fund and a common stock fund. The NAVs of these investments are provided by administrators of the funds. The collective trust fund is a public investment vehicle with a NAV quoted in a private market. The common stock fund invests in USEC Inc. common stock and an amount of short-term investments to facilitate liquidity for investors. The NAV for each fund is based on the underlying assets owned by the fund, less any expenses accrued against the fund, divided by the number of fund shares outstanding. Investments in these funds are classified within level 2 of the valuation hierarchy because the NAV's unit price is not quoted in an active market; however, the unit price is based on underlying investments which are traded in an active market.

Loans to plan participants are valued at cost plus accrued interest, which approximates fair value and are classified within Level 3 of the valuation hierarchy.

Following are the Plan investments as of December 31, 2009 and 2008 categorized by the fair value hierarchy levels described above (in thousands):

	Level 1	Level 2		Level 2 Level 3		Total	
December 31, 2009							
Mutual funds:							
Growth funds	\$ 54,900	\$		\$		\$	54,900
Blend funds	49,839						49,839
Target date funds	18,815						18,815
Intermediate-term bond funds	15,473						15,473
World stock funds	14,182						14,182
International funds	11,989						11,989
Value funds	3,307						3,307
Retirement income funds	538						538
Collective trust fund			126,758				126,758
Common stock fund			3,244				3,244
Participant loans					5,207		5,207
Total investments, at fair value	\$ 169,043	\$	130,002	\$	5,207	\$	304,252
							,
	Level 1		Level 2		Level 3		Total
December 31, 2008							
Mutual funds	\$ 119,062	\$		\$		\$	119,062
Collective trust fund			121,557				121,557
Common stock fund			4,237				4,237
Participant loans					4,750		4,750
Total investments, at fair value	\$ 119,062	\$	125,794	\$	4,750	\$	249,606

The table below sets forth a summary of changes in the fair value of the Plan's level 3 assets, which consist of participant loans, for the years ended December 31, 2009 and 2008 (in thousands):

	2009		2008
Beginning balance – January 1	\$ 4,750	\$	4,882
Issuances, maturities and settlements, net	45′	1	(132)
Ending balance – December 31	\$ 5,20	7 \$	4,750

5. Tax status:

The Plan has received a determination letter, dated March 19, 2008, from the Internal Revenue Service that the Plan is qualified to be exempt from federal income taxes under certain provisions of the Internal Revenue Code. Pursuant to such provisions, participants are not subject to federal income taxes on their contributions to the Plan, on participating employer contributions to the Plan, or on income accruing to their accounts, until such time as they receive distributions from the Plan. 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 Internal Revenue Code.

6. Related-party transactions:

Certain Plan investments are shares of mutual funds managed by FMTC. FMTC is the Trustee as defined by the Plan, and these transactions qualify as party-in- interest transactions.

Certain expenses of the Plan are paid by USEC to Fidelity, except participant loan costs and fund investment management expenses that are paid by the participant, and amounted to \$4,250 in 2009 and \$5,125 in 2008.

USEC as a participating employer is a related party. Related party values as of and for the years ended December 31, 2009 and 2008 are as follows (in thousands):

	2009	!	2	2008
Shares of USEC Inc. common stock held by the Plan		822		925
Fair value of USEC Inc. common stock held by the Plan	\$	3,164	\$	4,152
Purchases of USEC Inc. common stock by the Plan	\$	2,638	\$	4,580
Sales of USEC Inc. common stock by the Plan	\$	3,424	\$	1,288

7. Risks and Uncertainties:

The plan provides for investments in various investment securities. Investment securities are exposed to various risks such as interest rate, market, and credit risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near term and that such changes could materially affect participants' account balances and the amounts reported in the Statement of Net Assets Available for Benefits.

8. Reconciliation to Form 5500:

Net assets available for benefits are reported at fair value on Form 5500. The following is a reconciliation of net assets available for benefits per the financial statements to the Form 5500 as of December 31, 2009 and 2008 (in thousands):

	December 31,			
	2009		2008	
Net assets available for benefits per the financial statements	\$ 305,843	\$	254,535	
Adjustment from fair value to contract value for fully benefit-responsive investment contracts	 (1,591)		(4,929)	
Net assets available for benefits per Form 5500	\$ 304,252	\$	249,606	

The following is a reconciliation of the changes in net assets per the financial statements to the Form 5500 for the years ended December 31, 2009 and 2008 (in thousands):

		1,		
		2009	2008	
Net increase (decrease) in net assets available for benefits per the financial statements	\$	51,308	\$	(54,509)
Net change in fair value adjustment of fully benefit-responsive investment contracts		3,338		(4,929)
Net increase (decrease) in net assets available for benefits per Form 5500	\$	54,646	\$	(59,438)

Form 5500 Schedule H, Line 4(i) - Schedule of Assets (Held at End of Year) As of December 31, 2009

In Thousands

(a)	(b) Issuer	(c) Description of asset	()	Current value
	American Funds – Investment Company of America – Class			
	R5	Domestic Equity Mutual Fund	\$	19.126
	American Funds – New Perspective Fund – Class R5	Growth Mutual Fund that Invests Globally	Ψ	14,182
	American Funds – The Growth Fund of America – Class	,		, -
	R5	Domestic Equity Mutual Fund		24,608
	Davis NY Venture Fund – Class Y	Domestic Equity Mutual Fund		12,567
*	Fidelity Contrafund	Growth Mutual Fund		13,577
*	Fidelity Diversified International Fund – Class K	Growth Mutual Fund that Invests Internationally		11,989
	Fidelity Freedom 2000 Fund	Asset Allocation Mutual Fund		541
*	Fidelity Freedom 2005 Fund	Asset Allocation Mutual Fund		72
*	Fidelity Freedom 2010 Fund	Asset Allocation Mutual Fund		5,031
*	Fidelity Freedom 2015 Fund	Asset Allocation Mutual Fund		1,312
*	Fidelity Freedom 2020 Fund	Asset Allocation Mutual Fund		6,822
*	Fidelity Freedom 2025 Fund	Asset Allocation Mutual Fund		780
*	Fidelity Freedom 2030 Fund	Asset Allocation Mutual Fund		2,236
*	Fidelity Freedom 2035 Fund	Asset Allocation Mutual Fund		301
*	Fidelity Freedom 2040 Fund	Asset Allocation Mutual Fund		1,320
*	Fidelity Freedom 2045 Fund	Asset Allocation Mutual Fund		278
*	Fidelity Freedom 2050 Fund	Asset Allocation Mutual Fund		122
*	Fidelity Freedom Income Fund	Asset Allocation Mutual Fund		538
*	Fidelity Growth Company Fund – Class K	Domestic Equity Mutual Fund		7,470
*	Fidelity US Bond Index Fund	Income Mutual Fund		15,473
	Goldman Sachs – Mid Cap Value Fund Institutional Class	Mid-Cap Value Mutual Fund		3,307
	Morgan Stanley Institutional Fund Trust: Midcap Growth			
	Portfolio – Class I Shares	Growth-Oriented Stock Mutual Fund		9,245
	Royce Pennsylvania Mutual Fund – Investment Class	Domestic Equity Mutual Fund		6,937
*	Spartan Extended Market Index Fund – Investor Class	Index Mutual Fund		1,628
*	Spartan 500 Index – Investor Class	Index Mutual Fund		9,581
		Commingled Pool of the Fidelity Group Trust for		
	USEC Stable Value Fund	Employee Benefit Plans - at fair value		126,758
	USEC Stock Fund	Company stock fund for USEC Inc.		3,244
*	Participant Loans	Interest rates 4.25% to 10.5% maturing through 2024		5,207
		Total Current Value	\$	304,252

^{*} Indicates a party-in-interest to the Plan.

Column (d) – Cost is not required since the investments are participant directed.

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the trustees (or other persons who administer the employee benefit plan) have duly caused this annual report to be signed on its behalf by the undersigned hereunto duly authorized.

USEC Savings Program

June 22, 2010

/s/ W. Lance Wright
W. Lance Wright

USEC Inc. Chairman

Ву

USEC Inc. Benefit Plan Administrative Committee

EXHIBIT INDEX

Exhibit <u>Number</u>	<u>Description</u>
23.1	CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statement of USEC Inc. on Form S-8 (No. 333-129410 effective November 2, 2005) of our report dated June 22, 2010, accompanying the financial statements and supplemental information included in the Annual Report of USEC Savings Program on Form 11-K for the year ended December 31, 2009.

/s/ Clark, Schaefer, Hackett & Co.

Cincinnati, Ohio June 22, 2010