

SPIRE CORP
Form 11-K
June 29, 2010

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

FORM 11-K

- x Annual Report Pursuant to Section 15(d) of the Securities Exchange Act of 1934.
For the fiscal year ended December 31, 2009; or
- o Transition Report Pursuant to 15(d) of the Securities Exchange Act of 1934.
For the transition period from _____ to _____

Commission file number: 0-12742

- A. Full title of the plan and the address of the plan, if different from that of the issuer named below:

Spire Corporation 401(k) Profit Sharing Plan

- B. Name of issuer of the securities held pursuant to the plan and the address of its principal executive office:

Spire Corporation
One Patriots Park
Bedford, Massachusetts 01730-2396

SPIRE CORPORATION
401(k) PROFIT SHARING PLAN

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Plan Administrator and Participants of
Spire Corporation 401(k) Profit Sharing Plan
Bedford, Massachusetts

We have audited the accompanying statements of net assets available for benefits of Spire Corporation 401(k) Profit Sharing Plan (the Plan) as of December 31, 2009 and 2008, and the related statement of changes in net assets available for benefits for the year ended December 31, 2009. These financial statements and schedules 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 year ended December 31, 2009 in conformity with accounting principles generally accepted in the United States of America.

Our audits were 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) as of December 31, 2009 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 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 audits 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/ Siegrist and Cree, CPAs, PC

SIEGRIST AND CREE, CPA, P.C.

Wellesley Hills, Massachusetts
June 28, 2010

SPIRE CORPORATION 401(k) PROFIT SHARING PLAN

Statements of Net Assets Available for Benefits

December 31, 2009 and 2008

	2009	2008
Assets		
Investments:		
At fair value:		
Common stock – Spire Corporation	\$925,985	\$923,532
Mutual funds	6,216,675	4,022,348
Participant loans	164,818	175,176
Hartford Fixed Income Fund	—	182,660
Total investments	7,307,478	5,303,716
Contribution receivable:		
Participants	856	7,432
Employer	312	2,640
	1,168	10,072
Total assets	7,308,646	5,313,788
Liabilities		
Excess contributions payable	91,628	33,365
Net assets reflecting all investments at fair value	7,217,018	5,280,423
Adjustment from fair value to contract value for fully benefit responsive investment contracts	—	9,957
Net assets available for benefits	\$7,217,018	\$5,290,380

The Report of Independent Registered Public Accounting Firm and the accompanying notes are an integral part of these financial statements.

SPIRE CORPORATION 401(k) PROFIT SHARING PLAN

Statement of Changes in Net Assets Available for Benefits
For the Year Ended December 31, 2009

	2009
Additions to net assets:	
Investment income:	
Net appreciation in fair value of investments	\$ 1,034,434
Interest and dividends	94,256
Interest on participant loans	12,365
Net investment income	1,141,055
Contributions:	
Participant	635,669
Employer	251,306
Participant rollovers	16,378
	903,353
Total additions	2,044,408
Deductions from net assets:	
Benefits paid to participants	109,263
Administrative expenses	8,507
Total deductions	117,770
Net increase	1,926,638
Net assets available for benefits:	
Beginning of year	5,290,380
End of year	7,217,018

The Report of Independent Registered Public Accounting Firm and the accompanying notes are an integral part of these financial statements.

SPIRE CORPORATION 401(k) PROFIT SHARING PLAN

Notes to Financial Statements

For the Year Ended December 31, 2009

1. Plan Description

The following brief description of the Spire Corporation 401(k) Profit Sharing Plan (the Plan) provides general information only. Participants should refer to the Plan agreement for a more complete description of the Plan's provisions.

General

The Plan is a defined contribution plan covering all eligible employees of Spire Corporation (the "Company"). The Plan was established January 1, 1985 and was most recently amended on December 29, 2004. Wachovia Retirement Services served as the trustee of the Plan's assets from January 1, 2009 through September 16, 2009 and Capital Bank and Trust Company served as the trustee (the "Trustee") of the Plan's assets from September 16, 2009 through December 31, 2009. The Plan is subject to the provisions of the Internal Revenue Code of 1986, as amended, and the provisions of the Employee Retirement Income Security Act of 1974 (ERISA).

Eligibility, Vesting and Contributions

Eligibility and Contributions

Employees of the Company become eligible to participate in the Plan with voluntary contributions to their 401(k) salary deferral account upon reaching the age of 21 and upon completion of ninety (90) days of service with the Company. The entry dates are the first of the month following eligibility. Participants are immediately vested in their voluntary contributions plus actual earnings. A participant may contribute up to the maximum amount of pre-tax annual compensation allowed by the Internal Revenue Code. Participants may contribute amounts from distributions from other qualified plans. Participants direct the investment of their contributions into various investment funds offered by the Plan. Currently, the Plan offers to participant's investments in the Company's common stock, mutual funds and an insurance contract.

Matching Contribution and Profit Sharing Contribution Plan Component

The Company may contribute a discretionary matching contribution on the first 15% of compensation that a participant contributes to the Plan. The Company's matching contribution is invested directly in the Company's common stock. In 2009, the Company made a matching contribution amounting to \$251,306. In addition, the Company may make a profit sharing contribution. In 2009, the Company did not make any profit sharing contribution.

Vesting

Participants are vested immediately in their voluntary contributions to the Plan plus actual earnings thereon. Vesting in the Company matching contribution is based on continuous years of service and a participant is 100 percent vested after six years of credited service.

Participant Accounts

Each participant's account is credited with the participant's contributions and allocations of any Company matching contribution and the Plan earnings. The benefit to which a participant is entitled is the benefit that can be provided from the participant's vested account. The participant directs the investment of his or her individual account by selecting among funds in a common/collective trust, an insurance contract or Company common stock. Each participant has the ability to change the investment percentage at any time.

Forfeited Accounts

Termination of a participant before being fully vested results in forfeiture of the non-vested portion of the participant's account balance. Forfeitures may be used to reduce future employer contributions. The forfeited amounts available at December 31, 2009 and 2008 amounted to \$34,126 and \$33,523, respectively.

Participant Loans

Participants may borrow from their fund accounts a minimum of \$1,000 up to a maximum equal to the lesser of \$50,000 or fifty percent of their vested account balance. The loan terms range from 1 to 5 years or up to 10 years for the purchase of a primary residence. The loans are secured by the balance in the participant's account and bear interest rate commensurate with local prevailing rates as determined by the plan administrator. The participant may have five outstanding loans at any given time. Interest rates are prime plus one percent. Principal and interest are repaid ratably through payroll deductions.

Payments of Benefits

Employees are permitted to withdraw funds from their accounts upon attaining the age of 59-1/2, retirement, termination, financial hardship, disability or death. The participant or beneficiary may elect to receive lump-sum cash payments or installment payments over the participant's and beneficiary's assumed life expectancy determined at the time of distribution. Benefits are recorded when paid.

Plan Termination

Although management has not expressed any intent to do so, the Company has the right under the Plan to discontinue and terminate the Plan subject to the provisions of ERISA. In the event the Plan terminates, participants will become 100% vested in their accounts.

Administrative Costs

Certain administrative expenses of the Plan are borne by the Company for the year ended December 31, 2009 and amounted to \$24,226. Loan fees are charged against the borrowers' accounts.

2. Summary of Significant Accounting Policies

Basis of Accounting

The financial statements of the Plan are prepared on the accrual basis of accounting in conformity with U.S. generally accepted accounting principles ("GAAP").

Recent Accounting Pronouncements

Effective July 1, 2009, The Plan adopted the Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC" or "Codification"), Generally Accepted Accounting Principles ("ASC 105-10"). The Codification, which was issued in June 2009, is the new source of authoritative U.S. GAAP for the Securities and Exchange Commission ("SEC") registrants. The Codification reorganizes current U.S. GAAP into a topical format that eliminates the previous U.S. GAAP hierarchy and establishes two levels of U.S. GAAP – authoritative and non-authoritative. The Codification superseded all existing non-SEC accounting and reporting standards upon its effective date and carries the same level of authority as pronouncements issued under the previous hierarchy of U.S. GAAP. The adoption of the Codification did not have a significant impact on the Plan's financial statements.

In January 2010, the FASB issued Accounting Standards Update ("ASU") No. 2010-06, Fair Value Measurements and Disclosures – Improving Disclosures about Fair Value Measurements. This

guidance requires: (i) separate disclosure of significant transfers between Level 1 and Level 2 and reasons for the transfers; (ii) disclosure, on a gross basis, of purchases, sales, issuances, and net settlements within Level 3; (iii) disclosures by class of assets and liabilities; and (iv) a description of the valuation techniques and inputs used to measure fair value for both recurring and nonrecurring fair value measurements. This ASU is effective for reporting periods beginning after December 15, 2009, except for the Level 3 disclosure requirements, which will be effective for fiscal years beginning after December 15, 2010. The adoption of this ASU is not expected to have a material impact on the Plan's financial statements.

Effective January 1, 2009, the Plan adopted ASU No. 2009-12, Fair Value Measurements and Disclosures, which provides amendments to Fair Value Measurements and Disclosures, for the fair value measurement of investments in certain entities that calculate net asset value per share. The update permits a reporting entity, as a practical expedient, to measure the fair value of an investment on the basis of the net asset value per share of the investment if the net asset value is calculated in a manner consistent with the measurement principles of ASC 946 "Financial Services – Investment Companies". This ASU also requires additional disclosure of the attributes of these investments such as: (i) the nature of any restrictions on the reporting entity's ability to redeem its investment; (ii) unfunded commitments; and (iii) investment strategies of the investees. The adoption of this ASU did not have a material impact on the Plan's financial statements.

Effective January 1, 2009, the Plan adopted ASC 820, Determining Fair Value When the Volume and Level of Activity for the Asset or Liability Have Significantly Decreased and Identifying Transactions That Are Not Orderly. ASC 820 reaffirms that fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date under current market conditions. The guidance also reaffirms the need to use judgment in determining if a formerly active market has become inactive and in determining fair values when the market has become inactive. The adoption of this guidance did not have a material impact on the Plan's financial statements

Investments

The Plans investments are valued at fair value. The mutual funds are valued based on quoted market prices which represent the net asset value of the underlying assets of the account. Investments in the Company's common stock are stated at fair value based on the unitized value of the fund on the last business day of the year.

Investments in benefit responsive insurance contracts are stated at fair value as determined by the custodian of those Plan assets. The difference between the contract value and the fair value of the benefit responsive insurance contracts are presented as an adjustment to net assets available for benefits.

Participant loans are valued at their outstanding balances, which approximate fair value. Other investment securities are stated at fair value based on their quoted market prices on the last day of the year.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of net assets, liabilities and changes in net assets in the financial statements and accompanying notes. Actual results could differ from those estimates.

Risks and Uncertainties

The Plan provides to participants various investment options consisting primarily of mutual funds, Company common stock and an insurance contract. Mutual funds invest in securities, such as, stocks, bonds, and fixed rate income securities. Investment securities are exposed to risks including changing interest rates, market fluctuations and credit risks. Due to the level of risk associated with investment

securities, it is reasonable to assume that changes in the values of the investment securities will occur and that such changes could materially affect participants' account balances and the amounts reported in the statement of assets available for benefits.

Investment Transactions and Income

Purchase and sale transactions are recorded on a trade-date basis. Interest income is recorded on the accrual basis and dividend income is recorded on the ex-dividend date.

The Plan reports the net appreciation or decline in the fair value of its investments consisting of realized gains or losses and unrealized appreciation or depreciation on those investments in the statement of changes in net assets available for benefits.

3. Investments

Investments that represent five percent (5%) or more of the Plan's net assets are as follows at December 31:

	2009	2008
Mutual funds:		
American Funds Money Market Fund R3	\$ 1,433,694	\$ —
American Funds Investment Co of America R3	1,334,578	—
American Funds Growth Fund of America R3	1,245,837	—
American Funds Capital World Gr & Inc R3	964,016	—
Oppenheimer Quest Opportunity Value	—	643,991
Franklin Flexible Capital Growth	—	720,284
American Funds Europacific Growth	—	395,254
AIM Cash Reserve Shares	—	367,515
PIMCO Funds	—	273,395
Eaton Vance Large Cap Value	—	124,996
Common stock:		
Spire Corporation	925,985	923,532

During 2009 the Plan's investments (including investments bought, sold, and held during the year) appreciated in value by \$1,034,434 as follows:

Mutual funds	\$1,031,981
Common stock	2,453
Net appreciation in fair value of investments	\$1,034,434

4. Fair Value Measurements

The Plan follows ASC 820-10, Fair Value Measurements and Disclosures ("ASC 820-10"), for fair value measurements. ASC 820-10 defines fair value, establishes a framework for measuring fair value, and expands disclosures about fair value measurements. The standard provides a consistent definition of fair value, which focuses on an exit price, which is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The standard also prioritizes, within the measurement of fair value, the use of market-based information over entity specific information and establishes a three-level hierarchy for fair value measurements based on the nature of inputs used in the valuation of an asset or

liability as of the measurement date.

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The hierarchy established under ASC 820-10 gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). The three levels of the fair value hierarchy under ASC 820-10 are described below:

Level 1 – Pricing inputs are quoted prices available in active markets for identical investments as of the reporting date. As required by ASC 820-10, the Plan does not adjust the quoted price for these investments, even in situations where the Plan holds a large position and a sale could reasonably impact the quoted price.

Level 2 – Pricing inputs are quoted prices for similar investments, or inputs that are observable, either directly or indirectly, for substantially the full term through corroboration with observable market data. Level 2 includes investments valued at quoted prices adjusted for legal or contractual restrictions specific to these investments.

Level 3 – Pricing inputs are unobservable for the investment, that is, inputs that reflect the reporting entity’s own assumptions about the assumptions market participants would use in pricing the asset or liability. Level 3 includes investments that are supported by little or no market activity.

The level in the fair value hierarchy within which the fair value measurement is classified is determined based upon the lowest level input that is significant to the fair value measurement in its entirety.

Following is a description of the valuation methodologies used for assets and liabilities measured at fair value. The Plan’s valuation methodology used to measure the fair value of common stock and mutual funds were derived from quoted market prices as substantially all of these instruments have active markets. The valuation techniques used to measure fair value of participant loans, all of which mature by the end of 2024 and are secured by vested account balances of borrowing participants, are stated at the outstanding principal balance plus accrued interest, which approximates fair value.

During the year ended December 31, 2009, none of the Plan’s instruments were reclassified between Level 1, Level 2 or Level 3.

The following table presents the financial instruments related to the Plan’s investments carried at fair value on a recurring basis as of December 31, 2009 by ASC 820-10 valuation hierarchy (as defined above).

	Balance as of			
	December			
	31, 2009	Level 1	Level 2	Level 3
Mutual funds	\$ 6,216,675	\$ 6,216,675	\$ —	\$ —
Common stock – Spire Corporation	925,985	—	925,985	—
Participant Loans	164,818	—	—	164,818
Total investments at fair value	\$ 7,307,478	\$ 6,216,675	\$ 925,985	\$ 164,818
Percent of total	100%	85%	13%	2%

The following table presents a summary of changes in the fair value of the Plan’s Level 3 assets for the year ended December 31, 2009.

Participant Loans:	
Beginning balance at January 1, 2009	\$ 175,176
Purchases, sales, issuances and settlements (net)	(10,358)
Ending balance at December 31, 2009	\$ 164,818

5. Nonparticipant-Directed Investments

Information about the net assets and the significant components of the changes in net assets relating to nonparticipant-directed investments is as follows at December 31:

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	2009	2008
Net assets:		
Common stock - Spire Corporation	\$ 723,023	\$ 722,115
Other	767,910	434,846
Total nonparticipant-directed	\$ 1,490,933	\$ 1,156,961
Changes in net assets during 2009:		
Employer contributions		\$ 251,306
Net appreciation in fair value of investments		82,666
		\$ 333,972

6. Investment Contract with Insurance Company

In 1995, the Plan entered into a benefit-responsive investment contract with The Hartford Group (Hartford). Hartford maintains the contributions in a general account. The account is credited with earnings on the underlying investments and charged for participant withdrawals and administrative expenses. The contract is included in the statements of net assets available for benefits at fair value as determined using the market approach based on market prices of similar contracts. The adjustment from fair value to contract value for the investment contract is based on the contract value as reported to the Plan by Hartford. Contract value represents contributions made under the contract, plus earnings, less participant withdrawals and administrative expenses. Participants may ordinarily direct the withdrawal or transfer of all or a portion of their investment at contract value.

The fair value of the investment contract at December 31, 2008 was \$182,660. The average yield was 3% for 2008. The interest crediting rate was 3% for 2008.

Certain events, such as the premature termination of the contract by the Plan or the termination of the Plan, would limit the Plan's ability to transact at contract value with Hartford. The Plan administrator believes the occurrence of such events that would also limit the Plan's ability to transact at contract value with Plan participants is not probable.

The contract was cancelled in September 2009 and participant funds transferred to mutual funds.

7. Income Tax Status

The Internal Revenue Service has determined and informed the Company by a letter dated May 23, 1995, that the Plan and related trust are designed in accordance with applicable sections of the Internal Revenue Code (IRC). 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. Therefore, no provision for income taxes has been included in the Plan's financial statements.

8. Excess Contributions

Benefit distributions for the plan year ended December 31, 2009 and 2008 include payments of \$91,628 and \$33,365, respectively, made to certain active participants to return to them excess deferral contributions as required to satisfy the relevant nondiscrimination provisions of the Plan for the prior year.

Contributions received for the year ended December 31, 2009 are net of payments of \$91,628 to be made in 2010 to certain active participants to return to them excess deferral contributions as required to satisfy the relevant nondiscrimination provisions of the Plan. That amount is also included in the plan's statement of net assets available for benefits as excess contributions payable at December 31, 2009.

9. Loans to Participants

The Plan permits participants to obtain loans against their account balance. The loans are administered by the trustee and are recorded at their estimated fair value as reported by the administrator. As of December 31, 2009 and 2008, total loans outstanding were \$164,818 and \$175,176 respectively. Interest earned on such loans for the year ended December 31, 2009 amounted to \$12,365.

10. Related Party Transactions

Capital Bank and Trust is the custodian of the Plan's assets and record keeper. Certain participant investments are in mutual funds managed by Capital Bank and Trust and these transactions are considered as party-in-interest.

The Plan sponsor has paid the third party administrator fees and audit fees for 2009 aggregating \$24,226.

Participant loans granted in accordance with the Plan are considered as party-in-interest transactions.

11.Reconciliation of Financial Statements to Form 5500

The following is reconciliation per the financial statements at December 31, 2009 and 2008 to the 2009 and 2008 Form 5500 – Annual Return/Report of Employee Benefit Plan:

	2009	2008
Net assets available for benefits per the financial statements	\$7,217,018	\$5,290,380
Less: Contributions receivable		
Participants	(856)	(7,432)
Employer match	(312)	(2,640)
	(1,168)	(10,072)
Add: Excess contributions payable	91,628	33,365
Net assets available for benefits per Form 5500	\$7,307,478	\$5,313,673
Participant contributions per the financial statements	\$635,669	\$567,389
Less: Current year contributions receivable	(856)	(7,432)
Add: Current year excess contributions payable	91,628	33,365
Prior year contribution receivable	7,432	15,294
Loan payment incorrectly posted as contribution	—	94
Participant contributions per Form 5500	\$733,873	\$608,710
Employer matching contributions per financial statements	\$251,306	\$47,531
Less: Current year contribution receivable	(312)	(2,640)
Add: Prior year contribution receivable	2,640	—
Employer matching contributions per Form 5500	\$253,634	\$44,891

SPIRE CORPORATION

401(k) PROFIT SHARING PLAN

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

E.I.N. 04-2457335

Plan Number 002

(a)	(b)	(c)	(d)	(e)
	Identity of Issue, Borrower, Lessor or Similar Party	Description of Investment Including Maturity Date, Rate of Interest, Collateral, Par or Maturity Value	Cost	Current Value
*	American Funds	Money Market Fund R3	n/a	\$ 1,433,694
	American Funds	Investment Co of America R3	n/a	1,334,578
	American Funds	Growth Fund of America R3	n/a	1,245,837
	American Funds	Capital World Gr & Inc R3	n/a	964,016
	Spire Corporation	172,758 shares of common stock	\$790,592	925,985
	Pimco	Real Return Fund R	n/a	316,486
	American Funds	High Income Trust R3	n/a	259,940
	American Funds	Small Cap World Fund R3	n/a	257,018
	American Funds	Bond Fund of America R3	n/a	217,475
	Victory	Victory Small Company Opportunity	n/a	163,392
	American Funds	2025 Target Date Fund R3	n/a	7,846
	Alliance Bernstein	Global Real Estate Investment	n/a	3,404
	American Funds	2020 Target Date Fund R3	n/a	2,761
	Janus	Long/Short R	n/a	2,526
	Spire Corporation	Employer Stock Awaiting Purchase Fund	n/a	2,156
	American Funds	Capital World Bond R3	n/a	1,550
	American Funds	2035 Target Date Fund R3	n/a	1,272
	American Funds	2024 Target Date Fund R3	n/a	911
	American Funds	2030 Target Date Fund R3	n/a	769
	American Funds	2040 Target Date Fund R3	n/a	595
	Putnam	Global Natural Resources Fund R	n/a	220
	American Funds	2010 Target Date Fund R3	n/a	56
	American Funds	2050 Target Date Fund R3	n/a	56
	Templeton	Developing Markets R	n/a	56
	Wachovia	Cash	n/a	61
*	Participant Loans	Interest rates 4.25% to 9.25%	n/a	164,818
				\$ 7,307,478

* Represents party-in-interest

The independent registered public accounting firm's report should be read with this supplementary schedule.

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the Investment Committee of the Spire Corporation 401(k) Profit Sharing Plan have duly caused this annual report to be signed on their behalf by the undersigned hereunto duly authorized.

SPIRE CORPORATION 401(k) PROFIT SHARING
PLAN

Date: June 29, 2010

By: /s/ Robert S. Lieberman
Robert S. Lieberman
Chief Financial Officer and Treasurer

