SPIRE CORP Form 11-K June 29, 2007

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 Aconf 1934. For the fiscal year ended December 31, 2006; or	ct
_ Transition Report Pursuant to 15(d) of the Securities Exchange Act of 1934. For the transition period from to	£
Commission file number: 0-12742	
SPIRE CORPORATION 401(K) PROFIT SHARING PLAN	
(Full title of the plan)	
SPIRE CORPORATION	
(Name of issuer of the securities held pursuant to the plan)	
ONE PATRIOTS PARK BEDFORD, MASSACHUSETTS 01730-2396	
(Address of principal executive offices)	
	====
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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Plan Administrator 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, 2006 and 2005 and the related statement of changes in net assets available for benefits for the year ended December 31, 2006. 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. We were not engaged to perform an audit of the Plan's internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Plan's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and 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, 2006 and 2005, and the changes in net assets available for benefits for the year ended December 31, 2006, 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, 2006 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.

CARLIN, CHARRON & ROSEN, LLP

Westborough, Massachusetts

June 27, 2007

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SPIRE CORPORATION 401(K) PROFIT SHARING PLAN

Statements of Net Assets Available for Benefits December 31, 2006 and 2005

ASSETS	2006	2005
100210		
Investments:		
At fair value: Common stock - Spire Corporation Mutual funds		\$1,489,404 3,735,970
Mutuai lunds Participant loans	4,352,003 87,924	
Hartford Fixed Income Fund	170,252	192,719
	6,218,811	5,493,064
Participant contributions receivable		9,270
Total assets 6,218,811	5,502,334	
Liabilities Excess contributions payable	47,710 	
Net assets reflecting all investments at fair value	6,171,101	5,502,334
Adjustment from fair value to contract value for	10.000	10 252
fully benefit responsive investment contracts	10,066	10,352
Net assets available for benefits	\$6,181,767	\$5,512,686 =======

See notes to financial statements

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SPIRE CORPORATION 401(K) PROFIT SHARING PLAN

Statement of Changes in Net Assets Available for Benefits For the Year Ended December 31, 2006

Additions to net assets:	
Investment income:	
Interest and dividends	\$ 170 , 257
Interest on loans	4,289
Net appreciation in fair value of investments	411,038
	585,584

Participant contributions	307 , 345
Total additions	892 , 929
Deductions from net assets: Benefits paid to participants Administrative fees	223 , 208 640
Total deductions	223,848
Net increase	669,081
Net assets available for benefits: Beginning of year	5,512,686
End of year	\$6,181,767 =======

See notes to financial statements

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SPIRE CORPORATION 401(K) PROFIT SHARING PLAN

Notes to Financial Statements FOR THE YEAR ENDED DECEMBER 31, 2006

1. PLAN DESCRIPTION

The following description of the Spire Corporation 401(k) Profit Sharing Plan (the Plan) provides only general information. 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 employees of Spire Corporation (the Company) who have completed 90 days of service and are age twenty-one or older. The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974 (ERISA).

CONTRIBUTIONS

Each year, participants may contribute up to the maximum amount of pre-tax annual compensation as determined under the Internal Revenue Code. Participants who have attained age 50 before the end of the Plan year are eligible to make catch-up contributions. Participants may also contribute amounts representing distributions from other qualified defined benefit or defined contribution plans. Participants direct the investment of their contributions into various investment options offered by the Plan. The Plan currently offers the Company's common stock, twenty-one mutual funds, and an insurance contract as investment options for participants. The Company may contribute, at the determination of the board of directors, a discretionary matching contribution on the first 15 percent of base compensation that a participant contributes to the Plan. The Company's matching contribution is invested directly in Company common stock. The

Company may also make a profit sharing contribution. In 2006, the Company did not make matching or profit sharing contributions. Contributions are subject to certain limitations.

PARTICIPANT ACCOUNTS

Each participant's account is credited with the participant's contributions and the Company's matching contribution (if any) and an allocation of (a) the Company's profit sharing contribution (if any), and (b) plan earnings. Allocations are based on participant earnings or account balances, as defined. The benefit to which a participant is entitled is the benefit that can be provided from the participant's vested account.

VESTING

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

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SPIRE CORPORATION 401(K) PROFIT SHARING PLAN

NOTES TO FINANCIAL STATEMENTS
FOR THE YEAR ENDED DECEMBER 31, 2006 CONTINUED --

1. PLAN DESCRIPTION (CONTINUED)

FORFEITED ACCOUNTS

At December 31, 2006 and 2005, forfeited nonvested accounts totaled \$28,950 and \$27,002, respectively. These amounts may be used to reduce future employer contributions.

PARTICIPANT LOANS

Participants may borrow from their fund accounts a minimum of \$1,000 up to a maximum equal to \$50,000 or 50 percent of their account balance, whichever is less. The loans are secured by the balance in the participant's account and bear interest at a rate commensurate with local prevailing rates as determined by the plan administrator. Interest rates range from 5% to 9.5%. Principal and interest are repaid through payroll deductions.

PAYMENTS OF BENEFITS

On termination of service for any reason, a participant may elect to receive a lump-sum amount equal to the value of the participant's vested interest in his or her account or annual installments over a period of not more than a participant's and his or her beneficiary's assumed life expectancy determined at the time of distribution. Withdrawals may be made under certain other circumstances in accordance with the Plan document.

ADMINISTRATIVE COSTS

Except for loan fees, which are charged against the borrowers' accounts, administrative costs of the Plan are paid by the Company.

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 generally accepted accounting principles ("GAAP"). Benefits payable at year end are not accrued as they are

considered to be a component of net assets available for benefits.

USE OF ESTIMATES

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of net assets, liabilities and changes therein and disclosure of contingent assets and liabilities, if any. Actual results could differ from those estimates.

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SPIRE CORPORATION 401(K) PROFIT SHARING PLAN

Notes to Financial Statements For the Year Ended December 31, 2006

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

ADOPTION OF NEW ACCOUNTING STANDARDS

The Company has adopted FASB Staff Position (FSP) AAG INV-1 and SOP 94-4-1, REPORTING OF FULLY BENEFIT-RESPONSIVE INVESTMENT CONTRACTS HELD BY CERTAIN INVESTMENT COMPANIES SUBJECT TO THE AICPA INVESTMENT COMPANY GUIDE AND DEFINED-CONTRIBUTION HEALTH AND WELFARE AND PENSION PLANS, which requires that certain investment assets be reported at fair value and that an adjustment from fair value to contract value be included on the Statements of Net Assets Available for Benefits. As a result, certain amounts reported as of December 31, 2005 have been restated to comply with this standard. There was no effect on net assets available for benefits.

INVESTMENT VALUATION

Investments in mutual funds are stated at fair value based on quoted market prices, which represents the net asset value of shares held by the Plan at year end. Investments in the Spire Corporation common stock are stated at fair value based on the quoted market price on the last business day of the year for Company's common stock.

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

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

INVESTMENT TRANSACTIONS AND INVESTMENT INCOME

Investment transactions are accounted for on a trade-date basis. Interest income is recorded on the accrual basis. Dividend income is recorded on the ex-dividend date.

The Plan presents in the statement of changes in net assets the net appreciation or depreciation in the fair value of its investments that consists of the realized gains or losses and unrealized appreciation or depreciation on those investments.

PAYMENT OF BENEFITS

Benefits are recorded when paid.

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SPIRE CORPORATION 401(K) PROFIT SHARING PLAN

Notes to Financial Statements For the Year Ended December 31, 2006

3. INVESTMENTS

Investments that represent five percent or more of the Plan's net assets are as follows:

	Decemb	per 31,
	2006	2005
Mutual funds		
Oppenheimer Quest Opportunity Value	\$ 854,265	\$ 777 , 474
Franklin Flexible Capital Growth	1,058,695	1,083,273
American Funds Europacific Growth	485,937	408,940
Eaton Vance Large Cap Value	352 , 755	*
Common stock		
Spire Corporation	1,608,632	1,489,404

^{*} Represents less than 5% of the Plan's net assets

During 2006 the Plan's investments (including investments bought, sold, and held during the year) appreciated in value as follows:

		\$ 411,038
${\tt Common}$	stock	161,458
Mutual	funds	\$ 249,580

4. 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:

	Decemb	per 31,
	2006	2005
Net assets:		
Common stock - Spire Corporation	\$ 1,592,053	\$ 1,455,183
Other	35,002	25 , 920
Total nonparticipant-directed	\$ 1,627,055	\$ 1,481,103
	========	=========

Changes in net assets during 2006:

Net appreciation		160,575
	> ===	145 , 953

SPIRE CORPORATION 401(K) PROFIT SHARING PLAN

Notes to Financial Statements For the Year Ended December 31, 2006

5. 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, 2006 and 2005 was \$170,252 and \$192,719, respectively. The average yield was 3% for both 2006 and 2005. The interest crediting rate was 3.29% and 3.30% for 2006 and 2005, respectively. Certain events, such as the premature termination of the contract by the Plan or the $\ensuremath{\text{\text{premature}}}$ termination of the Plan, would limit the Plan's ability to transact at contract value with National. 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.

6. PLAN TERMINATION

Although it has not expressed any intent to do so, the Company has the right under the Plan to discontinue its contributions at any time and to terminate the Plan subject to the provisions of ERISA. In the event of plan termination, participants would become 100 percent vested in their employer contributions.

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 IRC.

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SPIRE CORPORATION 401(K) PROFIT SHARING PLAN

Notes to Financial Statements For the Year Ended December 31, 2006

8. EXCESS CONTRIBUTIONS

Benefit distributions for the plan year ended December 31, 2006 include

payments of \$29,685 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, 2006 are net of payments of \$47,710 made on March 9, 2007 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, 2006.

9. RISKS AND UNCERTAINTIES

The Plan invests 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.

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SPIRE CORPORATION 401(K) PROFIT SHARING PLAN

Schedule H, Line 4i - Form 5500 Schedule of Assets (Held at End of Year) December 31, 2006

E.I.N. 04-2457335 Plan Number 002

(A)	(B)	(C) DESCRIPTION OF INVESTMENT	(D)	(
	IDENTITY OF ISSUE, BORROWER, LESSOR OR	INCLUDING MATURITY DATE, RATE OF INTEREST, COLLATERAL,		CU
	SIMILAR PARTY	PAR OR MATURITY VALUE	COST	V
* Spir	e Corporation	194,279 shares of common stock	\$263 , 264	\$1,6
Oppe	enheimerFunds	Oppenheimer Quest Opportunity Value	n/a	8
Fran	klin Templeton Investments	Franklin Flexible Capital Growth	n/a	1,0
Thir	d Avenue	Third Avenue Small Cap Value A	n/a	
Amer	rican Funds	Europacific Growth	n/a	4
Hart	ford Life Insurance Co.	Fixed Income	n/a	1
AIM	Funds	AIM Cash Reserve Shares	n/a	2
Amer	rican Funds	American Balanced	n/a	1
Fran	klin Templeton Investments	Franklin Small-Mid Cap Growth	n/a	
MFS	Investment Management	Mass Investors Growth Stock	n/a	
Eato	on Vance	Large Cap Value	n/a	3
Eato	on Vance	Income Fund of Boston	n/a	1
Alli	anz Funds	RCM Global Technology	n/a	
Amer	rican Funds	New Perspective	n/a	

OppenheimerFunds	Oppenheimer Strategic Income	n/a
Sentinel Group Funds	Sentinel Small Company	n/a
PIMCO Funds	Total Return	n/a
Davis Funds	Davis New York Venture	n/a
Evergreen Investments	Evergreen Money Market	n/a
Black Rock Funds	Black Rock Money Market	n/a
Pioneer Investments	Pioneer Cash Reserves	n/a
Goldman Sachs	MidCap Value A	n/a
Allianz	NJF Dividend Value R	n/a
Participant Loans	Interest rates 5% to 9.5%	n/a

\$6**,**2

1

\$ 1

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

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SIGNATURE

The Plan. Pursuant to the requirements of the Securities Exchange Act of 1034, 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, 2007 By: /s/ Christian Dufresne

Christian Dufresne Chief Financial Officer

^{*} Represents party-in-interest