

SPIRE CORP  
Form DEF 14A  
April 09, 2010

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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

SCHEDULE 14A

(RULE 14a-101)

SCHEDULE 14A INFORMATION

Proxy Statement Pursuant to Section 14(a) of the Securities Exchange Act of 1934

Filed by the Registrant  Filed by a Party other than the Registrant

Check the appropriate box:

- Preliminary Proxy Statement
- Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))
- Definitive Proxy Statement
- Definitive Additional Materials
- Soliciting Material Pursuant to §240.14a-12

SPIRE CORPORATION

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(Name of Registrant as Specified In Its Charter)

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(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

Payment of Filing Fee (Check the appropriate box):

- No fee required.
- Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.

(1) Title of each class of securities to which transaction applies:

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Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined):

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- o Fee paid previously with preliminary materials.
  - o Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.

(1) Amount Previously Paid:

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(2) Form, Schedule or Registration Statement No.:

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(3) Filing Party:

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(4) Date Filed:

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Spire Corporation  
One Patriots Park  
Bedford, Massachusetts 01730-2396

NOTICE OF SPECIAL MEETING IN LIEU OF  
2010 ANNUAL MEETING OF STOCKHOLDERS

Notice is hereby given that the Special Meeting in Lieu of 2010 Annual Meeting of Stockholders (“Meeting”) of Spire Corporation (“Company”) will be held at Spire Corporation, One Patriots Park, Bedford, Massachusetts, on Thursday, May 20, 2010, at 10:00 a.m., to consider and act upon the following:

1. To fix the number of directors at eight and to elect seven directors to serve for one year, leaving one vacancy.
2. To ratify the selection of Caturano and Company, P.C. as the Company’s independent registered public accountants for the fiscal year ending December 31, 2010.
3. To transact such other business as may properly come before the Meeting.

Stockholders owning Company shares at the close of business on March 26, 2010, are entitled to receive notice of and to vote at the Meeting.

All stockholders are cordially invited to attend the Meeting.

By Order of the Board of Directors,

/s/ Michael W. O’Dougherty

Michael W. O’Dougherty  
Secretary

Bedford, Massachusetts  
April 9, 2010

IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS  
FOR THE MEETING OF STOCKHOLDERS TO BE HELD ON MAY 20, 2010:

THE PROXY STATEMENT AND THE 2009 ANNUAL REPORT TO STOCKHOLDERS  
ARE AVAILABLE AT [WWW.SPIRECORP.COM](http://WWW.SPIRECORP.COM)

WHETHER OR NOT YOU PLAN TO ATTEND THE MEETING AND IN ORDER  
TO ASSURE THAT YOUR SHARES ARE REPRESENTED AT THE MEETING,  
PLEASE SIGN AND RETURN THE ENCLOSED PROXY CARD  
AS PROMPTLY AS POSSIBLE IN THE ENCLOSED POSTAGE-PREPAID ENVELOPE.



Spire Corporation  
One Patriots Park  
Bedford, Massachusetts 01730-2396

PROXY STATEMENT

Special Meeting in Lieu of  
2010 Annual Meeting of Stockholders

May 20, 2010

The Board of Directors of Spire Corporation is soliciting proxies for the Special Meeting in Lieu of 2010 Annual Meeting of Stockholders (“Meeting”). This Proxy Statement contains important information for you to consider when deciding how to vote on the matters brought before the Meeting. The Meeting will be held on Thursday, May 20, 2010. This Proxy Statement, proxy card and the 2009 Annual Report and Form 10-K are being mailed to the stockholders on or about April 9, 2010.

PROPOSAL NUMBER ONE

ELECTION OF DIRECTORS

Spire Corporation's By-Laws provide for a minimum of three directors with the exact number to be voted on by the stockholders at the Meeting. The Board of Directors has recommended for this Meeting that the number of directors be fixed at eight and has nominated seven persons for election as directors as noted below, leaving one vacancy. Each director will hold office until the next Annual Meeting of Stockholders (or Special Meeting in Lieu of Annual Meeting of Stockholders) and until his successor is duly elected by the stockholders. For information regarding the independence of the Company's directors, see “Corporate Governance Matters” below.

Unless otherwise instructed, the persons named in the proxy will vote to fix the number of directors at eight and to elect the seven nominees named below as directors, leaving one vacancy. Although the Board does not contemplate that any of the nominees will be unavailable to serve as a director, should any unexpected vacancies occur, the enclosed proxy will be voted for such substituted nominees, if any, as may be designated by the Board. In no event will the proxy be voted for more than seven directors.

All of the nominees are currently directors. Set forth below is information about each nominee:

| Name                    | Age | Position with Company   | Director Since |
|-------------------------|-----|---|----------------|
| Udo Henseler            | 70  | Director and Chairman, Audit Committee                                    | 1992           |
| David R. Lipinski       | 58  | Director and Member, Audit Committee                                      | 2001           |
| Mark C. Little          | 48  | Director and Chief Executive Officer, Spire Biomedical                    | 2004           |
| Roger G. Little         | 69  | Chairman of the Board, Chief Executive Officer and President              | 1969           |
| Michael J. Magliochetti | 46  | Director and Member, Compensation Committee                               | 2002           |
| Guy L. Mayer            | 58  | Director and Chairman, Compensation Committee and Member, Audit Committee | 2001           |

Roger W. Redmond                      56      Director and Member, Compensation Committee                      1991

Udo Henseler, Ph.D., is currently the President and proprietor of Management Services International (“MSI”), a private business initiated in 1994. MSI provides business development services for biotechnology and life sciences firms at various stages of their corporate evolution. From 2002 to 2005, Dr. Henseler was the Chief Executive Officer and Chairman of eGene, Inc., a publicly traded biotechnology company, and further served as a Director in 2006. Dr. Henseler has over forty years’ combined global public and private company financial and operations leadership experience mainly in the biopharmaceutical and life sciences sectors, including positions as Director, Board Chairman, Chief Executive Officer, Chief Financial Officer, Executive Vice President, and memberships and Chairman of various Board committees. Dr. Henseler earned a B.A. in Germany, an MBA from Fairleigh Dickinson University in New Jersey, and Master’s and Ph.D. degrees from the Claremont Graduate University in Claremont, California. Dr. Henseler is also a Certified Public and

Certified Management Accountant. He currently serves as Director of RTI Biologics, Inc. (formerly Regeneration Technologies, Inc.). Prior to it being acquired by RTI Biologics, Inc. in February 2008, Dr. Henseler served as a Director and Chairman of the Audit Committee of Tutogen Medical, Inc.

Dr. Henseler's executive management experience, in-depth knowledge of manufacturing and expertise in finance and accounting across a broad range of public companies in the life sciences make him well qualified as a member of the Board and as Chairman of the Audit Committee of the Board.

David R. Lipinski is currently a consulting engineer with WorleyParsons Limited, a provider of professional services to the energy, resource and complex industries practicing, since 2006, in fields relating to electric power production and power facility life-cycle management. Since 2002, he has been an independent consultant in management and finance. From September 2004 to October 2005, he was Assistant Vice President, Business Development Group of Fifth Third Bank. Previously from August 2003 to May 2004, Mr. Lipinski was Vice President of Corporate Development of Spire Corporation and from August 2003 until November 2003, he was Chief Financial Officer. From 2000 to 2002, he was the Vice President for Corporate Development of Stratos Lightwave, Inc., a manufacturer of optoelectronic components and interconnection products used in optical communications and data networking. Mr. Lipinski is a director of Optelecom-NKF, Inc., a manufacturer of voice, video and data communications modules where he chairs the Compensation Committee and serves on the Audit Committee and the Governance Committee. He holds a B.S. in Physics from the United States Naval Academy and an M.B.A. from the University of New Haven. He is a candidate for the Master of Engineering from the University of Illinois. Mr. Lipinski is a retired Captain of the United States Naval Reserve.

Mr. Lipinski demonstrates extensive knowledge of complex financial, technical and operational issues facing the Company's solar energy and semiconductor businesses. He also brings transactional expertise including mergers and acquisitions, equity offerings and bank financings.

Mark C. Little joined the Company in 1994 as a Medical Device Engineer. He was named Assistant General Manager, Biomedical, in March 1999; General Manager, Spire Biomedical, in January 2000; Vice President and General Manager, Spire Biomedical in November 2000; and Chief Executive Officer, Spire Biomedical in June 2001. He holds a B.A. from Flagler College. Mr. Mark C. Little is the son of Mr. Roger G. Little.

Mr. Mark C. Little provides valuable company-specific experience to the business, leadership and management insight into driving strategic direction of the biomedical operation.

Roger G. Little was the founder of Spire Corporation in 1969, and since its formation has been Chairman of the Board of Directors, Chief Executive Officer and President of the Company. He has served on many committees and advisory boards related to small business innovative research, the transfer and commercialization of technology, the worldwide growth of the photovoltaics industry, and the development of sound renewable energy policies. Mr. Little holds a B.A. in Physics from Colgate University and a M.S. in Physics from the Massachusetts Institute of Technology. Mr. Roger G. Little is the father of Mark C. Little.

As the founder, Chairman and the Company's largest shareholder, Mr. Roger G. Little leads the Board with his own history of innovation and strategic vision for the Company. Mr. Roger Little brings extensive business and tremendous knowledge of the Company and the photovoltaics industry to the Board. His service as Chairman and CEO creates a critical link between management and the Board.

Michael J. Magliochetti, Ph.D., is currently President, CEO and Director of Claros Diagnostics, Inc., a point-of-care diagnostic technology firm. During 2006 he was Entrepreneur-in-Residence with Oxford Bioscience Partners LP, a leading life science venture capital firm, which he joined after the acquisition of Rehab Medical Holdings, Inc., a company focused in orthopedics, where he served as CEO and Director since 2003. Previously, he was President,

CEO and Director of Hema Metrics Corporation, a blood monitoring/dialysis technology company. Dr. Magliochetti was previously President, CEO and Director of UroSurge Corporation, a company specializing in products for the urology market. He has held senior positions with Haemonetics Corporation, Delta Surprenant, and an assignment with the U.S. Army Research Command. He has served as an Adjunct Professor of Biomedical Engineering at the University of Iowa. Dr. Magliochetti holds B.S. and Ph.D. degrees in Chemical Engineering from Northeastern University and the University of Massachusetts at Amherst, respectively, and a High Technology M.B.A. from Northeastern University.



Dr. Magliochetti has been selected to serve as a director of the Company because he has substantial experience working in CEO and director roles in the biomedical industry. Along with his academic knowledge, Dr. Magliochetti brings his valuable experience in operations management, strategic development and governance matters to the Board.

Guy L. Mayer currently serves as President and CEO of Ascension Orthopedics, Inc., a company focused on implant technology for the orthopedic extremities market. Prior to assuming this role, Mr. Mayer was President and Chief Executive Officer and a Director of Tutogen Medical, Inc., a leading manufacturer of sterile biological implant products made from human (allograft) and animal (xenograft) tissue, until it was acquired by RTI Biologics, Inc. in 2008. From 2001 to November 2004, Mr. Mayer served as Chairman and CEO of VisEn Medical, Inc., a private biotechnology company focused on molecular imaging technologies. Prior to VisEn, he was from 1998 to 2001, President and CEO of ETEX Corporation, a private biomedical company based in Cambridge, Massachusetts and from 1984 to 1998, he was with Zimmer Inc., a leader in orthopedic implants where he last served as President Global Products Group. Mr. Mayer is a 1974 Graduate of the University of Ottawa, and currently serves on the Board of Directors of Ascension Orthopedics and Pivot Medical.

Mr. Mayer's day-to-day leadership as Chief Executive Officer of Ascension Orthopedics, Inc. and formerly of Tutogen Medical, Inc. and VisEn Medical, Inc. provides him with the intimate knowledge of biomedical operations. Mr. Mayer's experience as a director of other public companies gives him exposure to the corporate governance practices of others.

Roger W. Redmond is currently Vice President and Sr. Investment Manager for Wells Fargo & Company, a financial services firm. From July 2004 to July 2006, Mr. Redmond was a Partner, Chief Investment Officer of Stillwater Investment Management, LLC, an independent, registered investment advisory firm. Previously from January 2002 to July 2004, Mr. Redmond was Senior Vice President of Windsor Financial Group, LLC, an investment advisor firm. From June 1999 to December 2001, Mr. Redmond was a managing director of Goldsmith, Agio, Helms and Company, a private investment banking firm specializing in representing sellers of private, public and closely held companies. He was designated a Chartered Financial Analyst in 1988. Mr. Redmond holds a B.S. in Chemistry from the University of Arizona and an M.B.A. in Finance from the University of Minnesota.

Mr. Redmond has extensive knowledge of capital markets, investment banking and risk analysis from experience at Wells Fargo & Company and Windsor Financial Group and, given his strong financial expertise, is invaluable to our Board's discussions of the Company's capital and liquidity needs.

The Board of Directors recommends a vote "FOR" fixing the number of directors at eight and for electing the seven nominees listed above, leaving one vacancy.

## PROPOSAL NUMBER TWO

### RATIFICATION OF SELECTION OF INDEPENDENT REGISTERED PUBLIC ACCOUNTANTS

The Audit Committee annually considers and selects the Company's independent registered public accountants. On March 15, 2010, the Audit Committee selected Caturano and Company, P.C. to act as the Company's independent registered public accountants for the fiscal year ending December 31, 2010.

The persons named in the enclosed proxy will vote to ratify the selection of Caturano and Company, P.C. as the Company's independent registered public accountants for the fiscal year ending December 31, 2010 unless otherwise directed by the stockholders. Stockholder ratification of Caturano and Company, P.C. as the Company's independent registered public accountants is not required by the Company's bylaws or otherwise. However, the Company is submitting the selection of Caturano and Company, P.C. to the stockholders for ratification as a matter of good

corporate practice. If the stockholders do not ratify the selection of Caturano and Company, P.C. as the Company's independent registered public accountants, the Audit Committee will reconsider the selection of such independent registered public accountants. Even if the selection is ratified, the Audit Committee may, in its discretion, direct the appointment of a different independent registered public accountant at any time during the year if it determines that such a change would be in the best interest of the Company and its stockholders.

The Board of Directors recommends a vote “FOR” the ratification of the selection of Caturano and Company, P.C. as the Company’s independent registered public accountants for the fiscal year ending December 31, 2010.

## CORPORATE GOVERNANCE MATTERS

### The Board of Directors

The Board of Directors of the Company held eight meetings during 2009. Each director then serving attended 75% or more of the aggregate of: (1) the total number of Board meetings; and (2) the total number of meetings of the committee(s) of which he is a member, if any. The Company does not have a written policy on board attendance at annual meetings of stockholders; however it does schedule a board meeting immediately after the annual meeting (or special meeting in lieu thereof) for which members attending receive compensation. In 2009, all Board Members were present during the Special Meeting held in Lieu of the 2009 Annual Meeting of Stockholders. The table below describes the Board’s committees.

| Committee Name         | Members                                   | Number of Meetings in 2009 | Principal Functions  |
|------------------------|---|----------------------------|--|
| Audit Committee        | U. Henseler<br>D. Lipinski<br>G. Mayer    | 7                          | <ul style="list-style-type: none"> <li>–Oversee the Company's auditing, accounting and financial reporting processes.</li> <li>–Appoint, compensate, evaluate and, where appropriate, replace independent accountants.</li> <li>–Oversee the Company's compliance with tax, legal and regulatory requirements.</li> </ul>  |
| Compensation Committee | M. Magliochetti<br>G. Mayer<br>R. Redmond | 3                          | <ul style="list-style-type: none"> <li>–Oversee and evaluate the Company's compensation programs and compensation of its executives.</li> <li>–Annually determine Chief Executive Officer's base salary and payments under the annual incentive bonus program and long-term deferred compensation plan.</li> <li>–Recommend or approve other executive officers' compensation, including annual performance objectives.</li> <li>–Recommend to the full Board of Directors compensation of Directors.</li> </ul> |

### Director Independence

The Board of Directors has determined that Drs. Henseler and Magliochetti and Messrs. Lipinski, Mayer and Redmond are “independent,” as independence is defined in the listing standards for the Nasdaq Stock Market. Accordingly, five of the seven directors are independent.

### Board Leadership Structure

Mr. Roger Little has been the Company’s Chairman of the Board, Chief Executive Officer and President since founding the Company in 1969. The Company believes that having one person, particularly Mr. Little with his wealth

of industry and executive management experience, his extensive knowledge of the history and operations of the Company and his own history of innovation and strategic thinking, serve as both Chief Executive Officer and Chairman is the best leadership structure for the Company because it demonstrates to our employees, suppliers, customers and stockholders that the Company is under strong leadership, with a single person setting the tone and having primary responsibility for managing the Company's operations. This unity of leadership promotes strategy development and execution, timely decision-making and effective management of company resources. The Company believes that it has been well served by this structure.

As described above, five of our seven directors are independent. In addition, all of the directors on each of the Audit Committee and Compensation Committee are independent directors and each of these committees is led by a committee chair. The committee chairs set the agendas for their committees and report to the full Board on their work. Furthermore, nominees for director are recommended for the Board's selection by a majority of the independent directors. We do not

have a lead director, but, as required by Nasdaq, our independent directors meet in executive session without management present as frequently as they deem appropriate, typically at the time of each regular Board meeting. All of our independent directors are highly accomplished and experienced business people in their respective fields, who have demonstrated leadership in significant enterprises and are familiar with board processes. The Company's independent directors bring experience, oversight and expertise from outside the company and industry, while the Company's Chairman and Chief Executive Officer and Mr. Mark Little bring company-specific experience and expertise.

#### Risk Oversight

While the Board of Directors is responsible for overseeing the Company's risk management, the Board has delegated many of these functions to the Audit Committee. Under its charter, the Audit Committee is responsible for discussing with management and the independent auditors the Company's major financial risk exposures, the guidelines and policies by which risk assessment and management is undertaken, and the steps management has taken to monitor and control risk exposure. In addition to the Audit Committee's work in overseeing risk management, the full Board regularly engages in discussions of the most significant risks that the Company is facing and how those risks are being managed, and the Board receives reports on risk management from senior officers of the Company and from the chair of the Audit Committee. In addition, the Chairman and Chief Executive Officer's extensive knowledge of the Company uniquely qualifies him to lead the Board in assessing risks. The Board of Directors believes that the work undertaken by the Audit Committee, together with the work of the full Board and the Chairman and Chief Executive Officer, enables the Board to effectively oversee the Company's risk management function.

#### The Audit Committee

The Board of Directors has determined that all members of the Audit Committee are "independent," as independence for the Audit Committee members is defined in the listing standards for the Nasdaq Stock Market. The Company's Board of Directors has determined that Dr. Henseler, Chairman of the Audit Committee, is an "audit committee financial expert" within the meaning of applicable regulations of the Securities and Exchange Commission ("SEC"), based on Dr. Henseler's business experience, as described on Page 1 of this Proxy Statement. For further information regarding the Audit Committee, see the "Audit Committee Report" beginning on Page 14 of this Proxy Statement.

#### The Nomination Process

The Company does not currently have a standing nominating committee or a charter for the nomination process. The Company does not have a nominating committee because it believes that obtaining opinions and advice from all directors in connection with Board nominations enhances the nomination process. Nominees for directors are recommended for the Board's selection by a majority of the independent directors. In March 2005, the Company adopted a Board resolution addressing the nominations process, which provides substantially as follows:

1. A majority of the independent directors (the "Majority") shall identify individuals believed to be qualified as candidates to serve on the Board and shall recommend that the Board select the candidates for all directorships to be filled by the Board or by the shareholders at an annual or special meeting. In identifying candidates for membership on the Board, the Majority shall take into account all factors it considers appropriate, which may include strength of character, mature judgment, relevant skills and the extent to which the candidate would fill a present need on the Board.
2. The Majority shall conduct all necessary and appropriate inquiries into the backgrounds and qualifications of possible candidates and, in that connection, shall have sole authority to retain any search firm to be used to assist it in identifying candidates to serve as directors.

3. The Majority shall review and make recommendations, as it deems appropriate, regarding the size and composition of the Board in order to ensure that the Board has the requisite expertise and that its membership consists of persons with sufficiently diverse backgrounds. The Majority is aware that one member of the Board should meet the criteria for an “audit committee financial expert” as defined by SEC rules, and that a majority of the members of the Board must be comprised of “independent directors” as defined in the rules of the Nasdaq Stock Market. The Majority also believes it is appropriate for certain members of the Company’s management to participate as members of the Board.

4. The Majority will consider candidates for director recommended by stockholders of the Company. There are no differences in the manner in which the Majority evaluates director nominees recommended by stockholders. Stockholders who wish to recommend director candidates should communicate names of such candidates, with relevant information on their qualifications, to the Secretary, at the address on the first page of this Proxy Statement. The Secretary will forward copies of such stockholder recommendations to the independent directors for their consideration.

While the Company does not have a formal diversity policy for Board membership, as noted above, the Board does seek to ensure that its membership consists of sufficiently diverse backgrounds, meaning a mix of backgrounds and experiences that will enhance the quality of the Board's deliberations and decisions. In considering candidates for the Board, the independent directors consider, among other factors, diversity with respect to viewpoint, skills and experience.

As indicated above, the independent directors will consider candidates for director recommended by stockholders of the Company. The procedures for submitting stockholder recommendations are explained below under "Stockholder Proposals" beginning on Page 17.

#### The Compensation Committee

The Compensation Committee of the Board of Directors is composed of three members, all of whom satisfy the independence standards for Compensation Committee members under the rules of the Nasdaq Stock Market, and operates under a written charter. A copy of the Compensation Committee Charter is not available to stockholders on the Company's website. A copy of the current Compensation Committee Charter is attached as Appendix A to the Proxy Statement dated April 15, 2008. For 2009, the Committee was composed of Mr. Mayer, chairman, Dr. Magliochetti and Mr. Redmond.

### STOCKHOLDER COMMUNICATIONS TO THE BOARD

Stockholders may contact an individual director, the Board as a group, or a specified Board committee or group, including the non-employee directors as a group, by the following means:

Mail: Spire Corporation  
One Patriots Park  
Bedford, MA 01730-2396  
Attn: Board of Directors

Each communication should specify the applicable addressee or addressees to be contacted as well as the general topic of the communication. The Company will initially receive and process communications before forwarding them to the addressee. The Company generally will not forward to the directors a stockholder communication that it determines to be primarily commercial in nature or relates to an improper or irrelevant topic, or that requests general information about the Company.

### COMPLIANCE WITH SECTION 16(a) OF THE SECURITIES EXCHANGE ACT OF 1934

Section 16(a) of the Securities Exchange Act of 1934 requires the Company's directors and executive officers, and persons who own more than 10% of a registered class of the Company's equity securities, to file with the Securities and Exchange Commission reports of ownership and changes in ownership of common stock and other equity

securities of the Company. Officers, directors and greater than 10% shareholders are required by SEC regulations to furnish the Company with copies of all Section 16(a) forms they file.

Based solely on review of the copies of such reports furnished to the Company or written or oral representations that no other reports were required, the Company believes that during 2009, all filing requirements applicable to its officers, directors and greater than 10% beneficial owners were complied with.



## OWNERSHIP OF SECURITIES

The following table below shows how the Company's common stock is owned by the Company's directors and the executive officers named in the Summary Compensation Table under "Compensation of Officers and Directors" and by owners of more than 5% of the Company's outstanding common stock as of March 1, 2010. Each person or entity, except Federated Investors, Inc. and Invesco Ltd., maintains a mailing address c/o Spire Corporation, One Patriots Park, Bedford, Massachusetts 01730-2396.

## Security Ownership of Certain Beneficial Owners and Management

| Name and Address of Beneficial Owner  | Amount and Nature of<br>Beneficial Ownership<br>(1) (2) | Percent of<br>Common Stock<br>(3) |
|---|---|-----------------------------------|
| Directors and Named Executive Officers:   |   |                                   |
| Udo Henseler (4)  | 30,248  | *                                 |
| Rodger W. LaFavre (5)   | 51,500  | *                                 |
| David R. Lipinski (6)   | 37,076  | *                                 |
| Mark C. Little (7)  | 163,525   | 1.97%                             |
| Roger G. Little (8)   | 2,138,205   | 25.66%                            |
| Michael J. Magliochetti (9)   | 32,750  | *                                 |
| Guy L. Mayer (10)   | 35,876  | *                                 |
| Roger W. Redmond (11)   | 42,604  | *                                 |
| 5% Stockholders:  |   |                                   |
| Federated Investors, Inc.<br>Federated Investors Tower<br>Pittsburgh, PA 15222-3779 (12)  | 696,676   | 8.36%                             |
| Invesco Ltd.<br>1555 Peachtree Street NE<br>Atlanta, GA 30309 (13)  | 865,820   | 10.39%                            |
| All directors and executive officers as a group<br>(11 persons consisting of 6 officers and<br>5 non-employee directors including those named<br>above) | 2,587,034   | 31.04%                            |

\* Less than 1% of the outstanding common stock.

(1) Includes shares for which the named person:

–has sole voting and investment power, or

–has shared voting and investment power with his spouse, unless otherwise indicated in the footnotes.

(2) Includes shares that can be acquired through stock option exercises through April 30, 2010.

(3) Based on 8,334,688 shares of common stock outstanding as of March 1, 2010. Shares of common stock which an individual or group has a right to acquire within 60 days are deemed to be outstanding for purposes of computing

the percentage ownership of such individual or group, but are not deemed to be outstanding for purposes of computing the percentage ownership of any other person shown on the table.

- (4) Includes 30,248 shares that can be acquired through stock option exercises through April 30, 2010.
- (5) Includes 51,500 shares that can be acquired through stock option exercises through April 30, 2010. Amount does not include 1,905 shares indirectly held by the Spire Corporation 401(k) Profit Sharing Plan.
- (6) Includes 35,876 shares that can be acquired through stock option exercises through April 30, 2010.

- (7) Includes 56,750 shares that can be acquired through stock option exercises through April 30, 2010. Also includes 6,415 shares that are held by spouse, with respect to which Mr. Mark Little disclaims beneficial ownership, and 5,390 shares held by Mr. Mark Little as custodian for his minor son. Amount does not include 9,384 shares indirectly held by the Spire Corporation 401(k) Profit Sharing Plan.
- (8) Includes 2,109,305 shares of common stock held in a Trust of which Mr. Roger G. Little is the primary beneficiary. Amount does not include 22,488 shares indirectly held by the Spire Corporation 401(k) Profit Sharing Plan and 5,281 shares held by his spouse indirectly by the Spire Corporation 401(k) Profit Sharing Plan.
- (9) Includes 32,750 shares that can be acquired through stock option exercises through April 30, 2010.
- (10) Includes 35,876 shares that can be acquired through stock option exercises through April 30, 2010.
- (11) Includes 35,876 shares that can be acquired through stock option exercises through April 30, 2010.
- (12) All information relating to beneficial ownership of common stock was obtained from the Schedule 13G/A, Amendment No. 4, filed on February 11, 2010 with the SEC, jointly filed by Federated Investors, Inc., Voting Shares Irrevocable Trust, John F. Donahue, Rhodora J. Donahue and J. Christopher Donohue. Federated Investors, Inc. (the "Parent") is the parent holding company of Federated Equity Management Company of Pennsylvania and Federated Global Investment Management Corp., which act as investment advisers to registered investment companies and separate accounts that own shares of common stock in Spire Corporation. The investment advisers are wholly owned subsidiaries of FII Holdings, Inc., which is wholly owned subsidiary of Federated Investors, Inc. All of the Parent's outstanding voting stock is held in the Voting Shares Irrevocable Trust (the "Trust") for which John F. Donahue, Rhodora J. Donahue and J. Christopher Donahue, act as trustees (collectively, the "Trustees"). The Trustees have joined in filing because of the collective voting control that they exercise over the Parent. In accordance with Rule 13d-4 under the Securities Act of 1934, as amended, the Parent, the Trust, and each of the Trustees declare that the Schedule 13G/A statement should not be construed as an admission that they are the beneficial owners of the reported securities, and the Parent, the Trust, and each of the Trustees expressly disclaim beneficial ownership of the reported securities.
- (13) All information relating to beneficial ownership of common stock was obtained from the Schedule 13G/A, Amendment No. 1., filed on January 11, 2010 with the SEC by Invesco Ltd., a Bermuda Company ("Invesco"), on behalf of itself and its subsidiary, Invesco Powershares Capital Management LLC. Invesco through its subsidiaries provides investment management services to institutional and individual investors worldwide. Invesco and its subsidiaries disclaim beneficial ownership of shares beneficially owned by any of their executive officers and directors. Each of Invesco's direct and indirect subsidiaries also disclaim beneficial ownership of shares beneficially owned by Invesco and any other subsidiary.

#### EXECUTIVE OFFICERS

The following table provides information on the executive officers of the Company. All the executive officers have been elected to serve until the Board meeting following the next annual meeting of stockholders (or Special Meeting in Lieu thereof) and until their successors have been elected and qualified.

| Name                  | Age | Position                                  |
|-----------------------|-----|---|
| Christian C. Dufresne | 46  | Chief Financial Officer and Treasurer (1) |
| Stephen J. Hogan      | 58  |   |

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|---------------------|----|--|
|                     |    | Executive Vice President and General Manager, Spire Solar    |
| Rodger W. LaFavre   | 60 | Chief Operating Officer                                      |
| Robert S. Lieberman | 58 | Chief Accounting Officer                                     |
| Mark C. Little      | 48 | Chief Executive Officer, Spire Biomedical                    |
| Roger G. Little     | 69 | Chairman of the Board, Chief Executive Officer and President |

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(1) On March 26, 2010, Dr. Dufresne notified the Company of his intention to resign as Chief Financial Officer and Treasurer. The effective date of his resignation has not yet been determined.

Christian C. Dufresne, Ph.D. joined the Company in 2000 as Assistant to the Chief Executive Officer and President. He was named Chief Financial Officer of Spire Biomedical in June 2002, Vice President, Corporate Planning in 2005 and appointed Chief Financial Officer and Treasurer in May 2006. Prior to joining Spire, Dr. Dufresne was a consultant for Stratford Associates, a market research firm that performs economic market modeling for Fortune 500 companies.

Stephen J. Hogan joined the Company in 1984 as Manager, Process Development. He was named Sales Manager, Photovoltaic Equipment, in 1988; Manager of Engineering and Manufacturing in 1990; Director of Photovoltaic Business Development in March 1997; Vice President and General Manager, Photovoltaics, in November 1997; and Executive Vice President and General Manager, Spire Solar in November 2000.

Rodger W. LaFavre joined the Company in 2000 as Vice President, Utility Marketing of Spire Solar Operations. He was named Vice President and Chief Financial Officer of Spire Solar in June 2002, and Chief Operating Officer of Spire Solar in November 2002 and Chief Operating Officer of Spire Corporation in February 2005. Prior to joining Spire, Mr. LaFavre was Vice President of Stone & Webster Engineering Corporation, a worldwide engineering and construction company, where he was responsible for business development, corporate planning and the Asia subsidiary.

Robert S. Lieberman, CPA, joined the Company in April 2009 as the Corporate Controller. He was named Chief Accounting Officer in December 2009. Prior to joining Spire, from May 2004 to January 2008, Mr. Lieberman was Senior Vice President and Chief Financial Officer for Millbrook Distribution Services, Inc., a division of United Natural Foods. Previously, from April 1999 to December 2003, he was Chief Financial Officer and Treasurer for Saleslink Corporation, a global supply chain management and eCommerce subsidiary of CMGI.

Mark C. Little is Chief Executive Officer, Spire Biomedical. His business experience is summarized on Page 2.

Roger G. Little has an ongoing five-year employment contract with the Company. See “Compensation of Officers and Directors – Employment Contracts, Termination of Employment and Change-in-Control Arrangements.” His business experience is summarized on Page 2.

## CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

### Related Party Transactions

On November 30, 2007, the Company entered into a new Lease Agreement (the “Bedford Lease”) with SPI-Trust, a Trust of which Mr. Roger G. Little, Chairman of the Board, Chief Executive Officer and President of the Company, is the sole trustee and principal beneficiary, with respect to 144,230 square feet of space comprising the entire building in which the Company has occupied since December 1, 1985. The term of the Bedford Lease commenced on December 1, 2007 and continues for five (5) years until November 30, 2012. The Company has the right to extend the term of the Bedford Lease for an additional five (5) year period. The annual rental rate for the first year of the Bedford Lease is \$12.50 per square foot on a triple net basis, whereby the tenant is responsible for operating expenses, taxes and maintenance of the building. The annual rental rate increases on each anniversary by \$0.75 per square foot. If the Company exercises its right to extend the term of the Bedford Lease, the annual rental rate for the first year of the extended term will be the greater of: (a) the rental rate in effect immediately preceding the commencement of the extended term; or (b) the market rate at such time, and on each anniversary of the commencement of the extended term the rental rate will increase by \$0.75 per square foot. The Company believes that the terms of the Bedford Lease are commercially reasonable. Rent expense under the Bedford Lease was \$2.0 million for the year ended December 31, 2009.

On August 29, 2008, the Company entered into a new Lease Agreement (the “Hudson Lease”) with SPI-Trust, with respect to 90,000 square feet of space comprising the entire building in which Spire Semiconductor, LLC has occupied space since June 1, 2003. The term of the Hudson Lease commenced on September 1, 2008, and continues for seven (7) years until August 31, 2015. The Company has the right to extend the term of the Hudson Lease for an additional five (5) year period. The annual rental rate for the first year of the Hudson Lease is \$12.50 per square foot on a triple-net basis, whereby the tenant is responsible for operating expenses, taxes and maintenance of the building. The annual rental rate increases on each anniversary by \$0.75 per square foot. If the Company exercises its right to extend the term of the Hudson Lease, the annual rental rate for the first year of the extended term will be the greater of: (a) the rental rate in effect immediately preceding the commencement of the extended term; or (b) the market rate at such time, and on each anniversary of the commencement of the extended term the rental rate will increase by \$0.75 per square foot. In addition,

the Company was required to deposit with SPI-Trust \$300,000 as security for performance by the Company for its covenants and obligations under the Hudson Lease. SPI-Trust was responsible, at its sole expense, to make certain defined tenant improvements to the building. The Company believes that the terms of the Hudson Lease are commercially reasonable and reflective of market rates. The lease agreement does not provide for a transfer of ownership at any point. The Hudson Lease is classified as a related party operating lease. Rent expense under the Hudson Lease for the year ended December 31, 2009 was \$1.3 million.

Mr. Edward D. Gagnon, General Manager of the Company's subsidiary, Spire Semiconductor, LLC, is a son-in-law of Mr. Roger G. Little, Chairman of the Board, Chief Executive Officer and President of the Company. For the year ended December 31, 2009, Mr. Gagnon received salary and bonus of \$165,000.

### COMPENSATION OF OFFICERS AND DIRECTORS

The following table describes the compensation awarded to the Chief Executive Officer and the Company's two most highly compensated executive officers of the Company (other than the CEO) who were serving as executive officers on December 31, 2009 (the "named executive officers"):

Summary Compensation Table

| Name &<br>Principal Position                                    | Year | Salary<br>(\$) <sup>(1)</sup> | Bonus<br>(\$) | Option<br>Awards<br>(\$) <sup>(2)</sup> | Annual Compensation   |  |  | Total<br>(\$) |
|---|------|-------------------------------|---------------|---|---|--|--|---------------|
|   |      |                               |               |   | Non-Equity<br>Incentive Plan<br>Compensation<br>(\$) <sup>(3)</sup> | Non-Qualified<br>Deferred<br>Compensation<br>Earnings (\$) | All Other<br>Compensation<br>(\$) <sup>(4)</sup> |               |
| Roger G. Little<br>Chairman of the<br>Board, CEO &<br>President | 2009 | \$507,500                     | \$ 2,480      | —                                       | —   | —  | \$18,404   | \$528,384     |
|   | 2008 | \$500,000                     | \$11,100      | —                                       | \$66,406  | —  | \$12,960   | \$590,466     |
| Rodger W. LaFavre<br>Chief Operating<br>Officer                 | 2009 | \$185,000                     | \$25,000      | \$99,000                                | —   | —  | \$13,314   | \$322,314     |
|   | 2008 | \$185,000                     | \$35,000      | —                                       | —   | —  | \$ 7,340   | \$227,340     |
| Mark C. Little<br>C E O , S p i r e<br>Biomedical               | 2009 | \$160,000                     | \$ 5,000      | \$19,800                                | —   | —  | \$12,216   | \$197,016     |
|   | 2008 | \$160,000                     | \$25,000      | —                                       | —   | —  | \$13,396   | \$198,396     |

(1) For Mr. Roger G. Little, salary includes payment of \$250,000 under a non-qualified deferred compensation plan paid on behalf of Mr. Little for 2009 and 2008. As of December 31, 2009, the Company has funded \$20,833 of its obligations and has accrued compensation expense of \$229,167 as called for by Mr. Little's employment agreement. See "Non-Qualified Deferred Compensation Plan" below.

(2) The amounts in this column reflect the aggregate grant date fair value, computed in accordance with FASB ASC Topic 718, for awards granted during the applicable year. Assumptions used in the calculation of these amounts are included in Note 8 in the notes to the Company's audited consolidated financial statements for the fiscal year ended December 31, 2009 included in the Company's Annual Report on Form 10-K filed with the SEC on March 31, 2010.

- (3) Mr. Roger G. Little received no bonus under his annual incentive bonus program for the year ended December 31, 2009. In 2009, Mr. Roger G. Little received a bonus of \$66,406 under his annual incentive bonus program for the year ended December 31, 2008.
- (4) Includes the Company's matching contribution of the 401(k) Profit Sharing Plan available to all employees, which vests according to a schedule and premiums paid by the Company on term life insurance policies provided to all executive officers. Mr. Mark C. Little's other compensation also included \$8,749 and \$11,383 of compensation from personal use of a company vehicle in each of the years ended December 31, 2009 and 2008, respectively.



### Non-Qualified Deferred Compensation Plan

Effective January 1, 2002, the Company adopted the Spire Corporation Non-Qualified Deferred Compensation Plan (the “Deferred Compensation Plan”) for Mr. Roger G. Little, Chairman of the Board, Chief Executive Officer and President of the Company. Under the Deferred Compensation Plan, the Company makes equal monthly contributions to the Spire Corporation Non-Qualified Deferred Compensation Trust (the “Trust”) up to the annually required amount of \$250,000. The Company records these contributions as selling, general and administrative expense when made. The Trustee makes all investment decisions for the Trust on behalf of Mr. Little. The Company has not guaranteed a return on investment for Mr. Little. All earnings and losses on the Deferred Compensation Plan assets are borne by Mr. Little. All contributions and earnings are fully vested to Mr. Little when made but are subject to the Company’s creditors in the event of bankruptcy. The Company makes contributions only if it has “available cash” to meet its operational needs as determined by the Compensation Committee. If the Compensation Committee determines that there is not enough “available cash” then it may defer funding for a particular plan year only until cash becomes available. As of December 31, 2009, the Company has funded \$20,833 of its obligations and has accrued compensation expense of \$229,167 as called for by Mr. Little’s employment agreement.

### Employment Contracts, Termination of Employment and Change-in-Control Arrangements

The Company has an employment agreement with Roger G. Little, Chairman of the Board, Chief Executive Officer and President. For 2009, he received the following pursuant to the agreement: a base salary of \$257,500 and payment under the Deferred Compensation Plan in the amount of \$250,000. While he is also entitled to a payment under an annual incentive program of up to 50% of base salary (depending on the attainment of specified performance goals as set by the Compensation Committee), he received no bonus under this plan for 2009. For subsequent years, base salary will be no less than \$205,000; and payments under the annual incentive bonus program and the Deferred Compensation Plan will be determined annually. The agreement also provides for a Company vehicle for Mr. Little and for life insurance for which he may designate a beneficiary in the face amount of \$500,000. Further, the agreement provides for the payment of 12 months’ base salary in the event he is terminated without cause or if he terminates the agreement for “good reason.” The agreement also precludes Mr. Little from competing with the Company during his employment and for a period of one year thereafter, and from disclosing confidential information. The agreement also entitles Mr. Little to paid vacations in accordance with the regular policy of the Company for the executive officers.

If Mr. Little's employment is terminated by the Company without cause or by Mr. Little for “good reason” within six months prior to a change-of-control or within one year thereafter, then in lieu of payment of 12 months' base salary, the Company shall pay Mr. Little in 24 monthly installments a cash severance amount equal to three times his average annual compensation, including base salary and bonuses.

The agreement was originally executed on January 1, 2002 and had a five-year term. On each anniversary of the agreement, the agreement is automatically extended for an additional five-year term unless the parties have renegotiated the agreement or one of the parties has given the other party notice of non-renewal.

### Stock Options

The following table describes stock options granted during 2009 to the named executive officers. There were no stock options exercised by the named executive officers in 2009.

#### 2009 Individual Grants

| Number of Securities<br>Underlying Options | Exercise or<br>Base Price | Expiration | Grant Date |
|--|---------------------------|------------|------------|
|--|---------------------------|------------|------------|

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| Name  | Granted (#) (1) | (\$/Share) | Date    | Fair Value (2) |
|---|-----------------|------------|---------|----------------|
| Roger G. Little<br>R o d g e r W .<br>LaFavre | 25,000          | \$6.24     | 5/21/19 | \$99,000       |
| Mark C. Little                                | 5,000           | \$6.24     | 5/21/19 | \$19,800       |

(1) The options granted to Messrs. LaFavre and Mark Little were granted in May 2009 under the Company's 2007 Stock Equity Plan and expire ten years from the date of grant. Mr. LaFavre's option vests with respect to 6,250 shares in each of 2010, 2011, 2012 and 2013. Mr. Mark Little's option vests with respect to 1,250 shares in each of 2010, 2011, 2012 and 2013.

(2) The amounts in this column reflect the aggregate grant date fair value of each option award computed in accordance with FASB ASC Topic 718. Assumptions used in the calculation of these amounts are included in Note 8 of the notes to the Company's audited consolidated financial statements for the fiscal year ended December 31, 2009 included in the Company's Annual Report on Form 10-K filed with the Securities and Exchange Commission on March 31, 2010.

The following table provides information about outstanding equity awards held by the named executive officers at the end of fiscal 2009:

Outstanding Equity Awards at Fiscal Year End

| Name              | Option Awards   |   |   |                            |                            | Stock Awards  |   |   |   |  |
|-------------------|---|---|---|----------------------------|----------------------------|---|---|---|---|--|
|                   | Number of Securities Underlying Unexercised Options Exercisable (#) (1) | Number of Securities Underlying Unexercised Options Unexercisable (#) (1) | Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Options (#) | Option Exercise Price (\$) | Option Expiration Date (2) | Number of Shares or Units of Stock that have not Vested (#) | Market Value of Stock that have not Vested (\$) | Unearned Shares, Units or Rights that have not Vested (#) | Equity Incentive Plan Awards: Market Payout Value of Unearned Shares, Units or Rights that have not Vested (\$) |  |
| Roger G. Little   | —   | —   | —   | —                          | —                          | —   | —   | —   | —   |  |
| Rodger W. LaFavre | 17,000  | —   | —   | \$4.03                     | 11/30/10                   | —   | —   | —   | —   |  |
|                   | 10,000  | —   | —   | \$3.90                     | 5/22/12                    | —   | —   | —   | —   |  |
|                   | 12,000  | —   | —   | \$4.33                     | 5/17/15                    | —   | —   | —   | —   |  |
|                   | 7,500   | 2,500   | —   | \$8.32                     | 11/16/16                   | —   | —   | —   | —   |  |
|                   | 2,500   | 2,500   | —   | \$9.60                     | 5/17/17                    | —   | —   | —   | —   |  |
|                   | 2,500   | 2,500   | —   | \$9.15                     | 8/16/17                    | —   | —   | —   | —   |  |
|                   | 0   | 25,000  | —   | \$6.24                     | 5/21/19                    | —   | —   | —   | —   |  |
| Mark C. Little    | 36,750  | —   | —   | \$3.90                     | 5/22/12                    | —   | —   | —   | —   |  |
|                   | 10,000  | —   | —   | \$4.33                     | 5/17/15                    | —   | —   | —   | —   |  |
|                   | 7,500   | 2,500   | —   | \$8.32                     | 11/16/16                   | —   | —   | —   | —   |  |
|                   | 2,500   | 2,500   | —   | \$9.60                     | 5/17/17                    | —   | —   | —   | —   |  |
|                   | 0   | 5,000   | —   | \$6.24                     | 5/21/19                    | —   | —   | —   | —   |  |

- (1) Options become exercisable in four equal annual installments beginning on the first anniversary of the date of grant.
- (2) The expiration date of each option occurs ten years after the date of grant of such option.

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The table below describes the securities authorized for issuance under the Company's equity compensation plans as of December 31, 2009:

## Equity Compensation Plan Information

|   | Number of Securities<br>to be Issued Upon<br>Exercise of<br>Outstanding Options,<br>Warrants and Rights | Weighted-Average<br>Exercise Price of<br>Outstanding<br>Options, Warrants<br>and Rights | Number of Securities<br>Remaining Available<br>for Future Issuance<br>under Equity<br>Compensations (1) (2) |
|---|---|---|---|
| Equity compensation plans<br>approved by security<br>holders        | 781,677   | \$7.10  | 521,800   |
| Equity compensation plans<br>not<br>approved by security<br>holders | —   | —   | —   |
| Total   | 781,677   | \$7.10  | 521,800   |

(1) Consists of shares that may be granted under the Company's 2007 Stock Equity Plan (the "2007 Plan"), the Company's only active equity compensation plan.

(2) In addition to being available for future issuances upon exercise of options that may be granted after December 31, 2009, a maximum of 500,000 shares under the 2007 Plan may instead be issued in the form of restricted stock, deferred stock, performance awards or other stock-based awards.

## Directors' Compensation

Spire Corporation does not pay its directors who are also officers of the Company any additional compensation for services as directors. In December of 2006, the Compensation Committee engaged Francois Quinson, an independent consultant, to review the compensation paid to the Company's Board of Directors. Based upon Mr. Quinson's recommendations, on March 15, 2007, the Compensation Committee approved the following as elements of compensation for non-employee directors and the Board of Directors passed a resolution approving the compensation package. Accordingly, in 2009, the compensation for non-employee directors included the following:

- Cash Board meeting attendance fee of \$1,000 per meeting attended in person and \$500 for each meeting by telephone;
- Non-incentive stock options under the 2007 Plan for 2,000 shares for each Board meeting attended either in person or by telephone, with the awards being for one meeting per quarter and four quarterly meeting per year, to a maximum of 8,000 shares per annum. These options vest immediately and are considered a long term incentive;
- Cash meeting attendance fee of \$1,000 for each formal meeting of the Audit Committee and of the Compensation Committee attended either in person or by telephone, with the payments subject to an annual maximum of \$5,000 per member of each such committee;
- No additional compensation when committee meeting is held in conjunction with a Board meeting;
- \$12,000 annual retainer for all directors, payable quarterly;

- \$5,000 annual retainer for the Chairman of the Audit Committee, payable quarterly;
- \$4,000 annual retainer for the Chairman of the Compensation Committee, payable quarterly;
- \$2,000 annual retainer for other members of the Audit and Compensation Committees, payable quarterly; and
- Expense reimbursement for all reasonable expenses incurred in attending meetings and tending to Spire business.

The following table shows non-employee director compensation in 2009:

| Name<br>(1)                       | Fees Earned<br>or<br>Paid in Cash<br>(\$) | Stock<br>Awards<br>(\$) | Options<br>Awards<br>(\$)<br>(2) | Non-Equity<br>Incentive Plan<br>Compensation<br>Earnings | Non-Qualified<br>Deferred<br>Compensation<br>Earnings | All Other<br>Compen-sation | Total<br>(\$) |
|-----------------------------------|---|-------------------------|----------------------------------|--|---|----------------------------|---------------|
| Udo Henseler                      | \$27,500                                  | —                       | \$25,016                         | —  | —   | —                          | \$52,516      |
| David R. Lipinski                 | \$22,000                                  | —                       | \$25,016                         | —  | —   | —                          | \$47,016      |
| M i c h a e l J .<br>Magliochetti | \$23,000                                  | —                       | \$25,016                         | —  | —   | —                          | \$48,016      |
| Guy L. Mayer                      | \$29,000                                  | —                       | \$25,016                         | —  | —   | —                          | \$54,016      |
| Roger W. Redmond                  | \$20,000                                  | —                       | \$25,016                         | —  | —   | —                          | \$45,016      |

(1) As noted above, Messrs. Roger G. Little and Mark C. Little are not included in this table as they are officers of the Company and, accordingly, receive no compensation for their services as directors. The compensation received by Messrs. Roger G. Little and Mark C. Little as officers of the Company is shown in the Summary Compensation Table above.

(2) The amounts in this column reflect the aggregate grant date fair value, computed in accordance with FASB ASC Topic 718, for awards granted during 2009. Assumptions used in the calculation of these amounts are included in Note 8 in the notes to the Company's audited consolidated financial statements for the fiscal year ended December 31, 2009 included in the Company's Annual Report on Form 10-K filed with the SEC on March 31, 2010. As of December 31, 2009, each non-employee director had the following number of options outstanding: Udo Henseler: 28,872; David R. Lipinski: 34,500; Michael J. Magliochetti: 31,374; Guy L. Mayer: 34,500; and Roger W. Redmond: 34,500.

#### AUDIT COMMITTEE REPORT

This Audit Committee Report shall not be deemed to be "soliciting material" or to be filed with the Securities and Exchange Commission or subject to Regulation 14A or 14C under the Exchange Act, or to the liabilities of Section 18 of the Exchange Act. Notwithstanding anything to the contrary set forth in any of the Company's previous filings under the Securities Act of 1933 or the Exchange Act that might incorporate future filings, including this Proxy Statement, in whole or in part, this report shall not be incorporated by reference into any such filings.

#### Composition and Charter

The Audit Committee of the Board of Directors is currently composed of three directors, all of whom satisfy the independence standards for Audit Committee members under the rules of the Nasdaq Stock Market, and operates under a written charter. A copy of the Audit Committee Charter is not available to stockholders on the Company's website. A copy of the current Audit Committee Charter is attached as Appendix B to the Proxy Statement dated April 15, 2008. For 2009, the Committee was composed of Dr. Henseler, chairman, Mr. Lipinski and Mr. Mayer.

#### Responsibilities

The responsibilities of the Audit Committee include engaging an accounting firm to serve as Spire's independent registered public accounting firm. Management is responsible for Spire's internal controls and financial reporting process. The independent registered public accounting firm is responsible for performing an independent audit of

Spire's consolidated financial statements in accordance with the standards of the Public Company Accounting Oversight Board (PCAOB) and for issuing an opinion thereon. The Audit Committee's responsibility is to oversee these processes and Spire's internal controls. The Audit Committee does not prepare or audit the Company's financial statements or certify their accuracy.



Review with Management and Independent Registered Public Accountants

In this context, the Audit Committee has met and held discussions with management and the independent registered public accounting firm. Management represented to the Audit Committee that Spire's consolidated financial statements were prepared in accordance with generally accepted accounting principles, and the Audit Committee has reviewed and discussed the audited consolidated financial statements with management and the independent registered public accounting firm. The Audit Committee has discussed with the independent registered public accounting firm the matters required to be discussed by the statement on Auditing Standards No. 61, as amended, as adopted by the PCAOB in Rule 3200T.

Spire's independent registered public accounting firm also provided to the Audit Committee the written disclosures and the letter required by applicable requirements of the PCAOB regarding the independent registered public accounting firm's communications with the Audit Committee concerning independence, and the Audit Committee discussed with the independent registered public accounting firm, Caturano and Company, P.C., the firm's independence.

Summary

Based upon the Audit Committee's discussions with management and the independent registered public accounting firm and the Audit Committee's review of Spire's audited consolidated financial statements and the representations of management, and the report of the independent registered public accounting firm to the Audit Committee, the Audit Committee recommended that the Board of Directors include the audited consolidated financial statements in Spire's Annual Report on Form 10-K for the year ended December 31, 2009, as filed with the SEC.

This report is submitted by the Audit Committee.

Udo Henseler, Chairman  
 David R. Lipinski  
 Guy L. Mayer

DISCLOSURE OF PRINCIPAL ACCOUNTANT FEES AND SERVICES

The following table presents aggregate fees billed to the Company for professional services rendered by Caturano and Company, P.C. for each of the last two fiscal years.

|                    | 2009 Fees | 2008 Fees |
|--------------------|-----------|-----------|
| Audit Fees         | \$357,000 | \$426,000 |
| Audit-Related Fees | —         | —         |
| Tax Fees           | 30,000    | 30,000    |
| Total Fees         | \$387,000 | \$456,000 |

Audit Fees were for professional services rendered for the audit of the Company's annual consolidated financial statements and review of consolidated financial statements included in the Company's Quarterly Reports on Form 10-Q and services that are normally provided by the independent registered public accounting firm in connection with statutory and regulatory filings or engagements.

Audit-Related Fees were for assurance and related services that are reasonably related to the performance of the audit or review of the Company's financial statements and are not reported under "Audit Fees."

Tax Fees were for professional services rendered for federal, state and international tax compliance, tax advice and tax planning.

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## Policy on Audit Committee Pre-Approval of Audit and Permissible Non-Audit Services of Independent Auditors

The Audit Committee pre-approves all audit and permissible non-audit services provided by the independent registered public accounting firm. These services may include audit services, audit-related services, tax services and other services. Pre-approval is generally provided for up to one year, and any pre-approval is detailed as to the particular service or category of services and is generally subject to a specific budget. The independent registered public accounting firm and management are required to periodically report to the Audit Committee regarding the extent of services provided by the independent registered public accounting firm in accordance with the pre-approval, and the fees for the services performed to date. The Audit Committee may also pre-approve particular services on a case-by-case basis.

## INDEPENDENT REGISTERED PUBLIC ACCOUNTANTS

The Audit Committee of the Board of Directors of Spire Corporation has selected Caturano and Company, P.C. to act as the Company's independent registered public accountants for the current fiscal year. They have served as accountants for the Company since January 7, 2004. Pursuant to Proposal Two, the stockholders of the Company are being asked to ratify such selection.

As the Company's independent registered public accountants, Caturano and Company, P.C. was engaged to conduct quarterly reviews of the Company; to conduct an audit of the consolidated financial statements of the Company for the full year 2009; and to prepare the federal and state tax returns of the Company for the year ended December 31, 2009. Representatives of Caturano and Company, P.C. are expected to attend the Meeting in order to respond to questions from stockholders and will have the opportunity to make a statement.

## PROXIES AND VOTING AT THE MEETING

Each signed and returned proxy will be voted in accordance with any instructions of the stockholder(s) executing the proxy. A proxy signed without instructions will be voted in accordance with the Board's recommendations. If a stockholder attends the Meeting and votes in person, his or her proxy will not be counted. A signed proxy may be revoked at any time before it is exercised, either in person or by giving written notice of revocation to the Secretary of the Company at the address on the first page of this Proxy Statement.

Each share of common stock is entitled to one vote on all matters submitted to the stockholders for approval. No vote may be taken unless a quorum (i.e., a majority of the common stock issued, outstanding and entitled to vote) is present at the Meeting in person or by proxy. The seven nominees for election as directors at the Meeting who receive the greatest number of votes properly cast for the election of directors shall be elected the directors of the Company. The ratification of the selection of Caturano and Company, P.C. as the Company's independent registered public accountants for the fiscal year ending December 31, 2010 and the approval of any other matter as may properly come before the meeting requires the affirmative vote of a majority in interest of the stock represented and entitled to vote at the meeting. Broker non-votes are counted for purposes of determining the presence of a quorum, but are not counted for purposes of determining the result of any vote. Abstentions are counted in determining the presence of a quorum and have the effect of a vote against a proposal.

The Board has fixed March 26, 2010, as the record date for determining the stockholders entitled to vote at the Meeting. On that date there were 8,334,688 shares of common stock issued, outstanding, and entitled to vote.

## OTHER MATTERS

The Board knows of no other matters that may come before the Meeting. If any other matters should properly come before the Meeting, it is the intention of the persons named in the accompanying proxy to vote in accordance with their judgment on such matters. Such discretionary authority is conferred by the proxy.

All costs of this solicitation, which is being made principally by mail, but which may be supplemented by telephone or personal contacts by the Company's directors, officers, and employees without additional compensation, will be borne by the Company. Brokers will be requested to forward proxy soliciting material to the beneficial owners of the stock held in such brokers' names, and the Company will reimburse them for their expenses incurred in complying with the Company's request.

In the Company's filings with the SEC, information is sometimes "incorporated by reference." This means that the Company is referring you to information that has previously been filed with the SEC, so the information should be considered as part of the filing you are reading. Based on SEC regulations, the Audit Committee Report specifically is not incorporated by reference into any other filings with the SEC.

The Company's policy is to encourage its Board members to attend the Annual Meeting of Stockholders, and all of the members standing for re-election attended the Special Meeting in Lieu of the 2009 Annual Meeting of Stockholders.

#### STOCKHOLDER PROPOSALS — 2011 ANNUAL MEETING

In order to be included in the proxy statement and form of proxy for the 2011 Annual Meeting of Stockholders pursuant to Exchange Act Rule 14a-8, stockholder proposals must be received by the Company at its corporate offices in Bedford, Massachusetts, no later than December 10, 2010 (120 days before the anniversary of the date this Proxy Statement is being mailed to the Company's stockholders). Such proposals must also comply with the requirements as to form and substance established by the SEC if such proposals are to be included in the proxy statement and form of proxy. Stockholder proposals to be presented at the 2011 Annual Meeting, other than stockholder proposals submitted pursuant to Exchange Act Rule 14a-8 for inclusion in the proxy statement and form of proxy for the 2011 Annual Meeting, must be received in writing at the Company's corporate offices no later than February 23, 2011 (45 days before the anniversary of the date this Proxy Statement is being mailed to the Company's stockholders).

Independent directors will consider any director nominees you recommend in writing for the 2011 Annual Meeting if the Secretary receives notice by December 10, 2010, and you are a stockholder of record on the day you provide notice of your recommendation or nomination to the Company and on the record date for determining stockholders entitled to notice of the meeting and to vote.

Your notice must include the following information for each person you are recommending or nominating for election as a director:

–The name, age, business address and residence address of the person;

–The principal occupation or employment of the person;

–The number of shares of Spire common stock which the person owns beneficially or of record; and

–Any other information relating to the person that must be disclosed in a proxy statement or other filings required to be made in connection with solicitations of proxies for election of directors under Section 14 of the Exchange Act and its rules and regulations.

In addition, your notice must include the following information about you:

–Your name and record address;

–The number of shares of Spire common stock that you own beneficially or of record;

–A description of all arrangements or understandings between you and each proposed nominee and any other person or persons, including their names, pursuant to which the nomination is to be made;

–A representation that you intend to appear in person or by proxy at the meeting to nominate the person or persons named in your notice; and

–Any other information about you that must be disclosed in a proxy statement or other filings required to be made in connection with solicitations of proxies for election of directors under Section 14 of the Exchange Act and its rules and regulations.

The notice must include written consent by each proposed nominee to being named as a nominee and to serve as a director if elected. No person will be eligible for election as a director of Spire unless recommended by a majority of independent directors and nominated by the Board or nominated in accordance with the procedures set forth above.

By Order of the Board of Directors,

/s/ Michael W. O'Dougherty

Michael W. O'Dougherty  
Secretary

April 9, 2010

SPIRE CORPORATION

Proxy for Special Meeting in Lieu of 2010 Annual Meeting of Stockholders

May 20, 2010

THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS.

The undersigned hereby appoints Roger G. Little and Michael W. O'Dougherty, and either one of them, proxies of the undersigned, with power of substitution, to act for and to vote all shares of Spire Corporation common stock owned by the undersigned, upon the matters set forth in the Notice of Meeting and related Proxy Statement at the Special Meeting in Lieu of 2010 Annual Meeting of Stockholders of Spire Corporation, to be held at Spire Corporation, One Patriots Park, Bedford, Massachusetts at 10:00 a.m. on Thursday, May 20, 2010, and any adjournments thereof. The proxies, and either one of them, are further authorized to vote, in their discretion, upon such other business as may properly come before the Meeting, or adjournments thereof.

(Continued and to be signed on reverse side.)

SPECIAL MEETING IN LIEU OF 2010 ANNUAL MEETING OF STOCKHOLDERS

SPIRE CORPORATION

May 20, 2010

IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS FOR THE MEETING OF STOCKHOLDERS TO BE HELD ON MAY 20, 2010:

THE PROXY STATEMENT AND 2009 ANNUAL REPORT TO STOCKHOLDERS ARE AVAILABLE AT WWW.SPIRECORP.COM

Please sign, date and mail your proxy card in the envelope provided as soon as possible.

YOUR SHARES WILL BE VOTED FOR THE FOLLOWING PROPOSAL UNLESS OTHERWISE INDICATED. PLEASE SIGN, DATE AND RETURN PROMPTLY IN THE ENCLOSED ENVELOPE.

PLEASE MARK YOUR VOTE IN BLUE OR BLACK INK AS SHOWN HERE: x

1. ELECTION OF DIRECTORS. To fix the number of directors at eight and to elect seven directors, leaving one vacancy, to serve for one year:

p FOR ALL NOMINEES

p WITHHOLD AUTHORITY FOR ALL NOMINEES

p FOR ALL EXCEPT (See instructions below)

NOMINEES:

- i Udo Henseler
- i David R. Lipinski
- i Mark C. Little
- i Roger G. Little
- i Michael J. Magliochetti
- i Guy L. Mayer



2. PROPOSAL FOR THE RATIFICATION OF CATURANO AND COMPANY, P.C. AS THE COMPANY'S INDEPENDENT REGISTERED PUBLIC ACCOUNTANTS FOR THE FISCAL YEAR ENDING DECEMBER 31, 2010.

p FOR  
p AGAINST  
p ABSTAIN

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INSTRUCTIONS: To withhold authority to vote for any individual nominee(s), mark “FOR ALL EXCEPT” and fill in the circle next to each nominee you wish to withhold, as shown here:

To change the address on your account, please check the box at right and indicate your new address in the address space above. Please note that changes to the registered name(s) on the account may not be submitted via this method. p

Signature of Stockholder \_\_\_\_\_ Date \_\_\_\_\_  
Signature of Stockholder \_\_\_\_\_ Date \_\_\_\_\_

NOTE: Please sign exactly as your name or names appear on this Proxy. When shares are held jointly, each holder should sign. When signing as executor, administrator, attorney, trustee or guardian, please give full title as such. If the signer is a corporation, please sign full corporate name by duly authorized officer, giving full title as such. If signer is a partnership, please sign name by authorized person.