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SPIRE CORP
Form 10KSB
March 21, 2006

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

FORM 10-KSB

- Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934
For the fiscal year ended December 31, 2005 or
- Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934
For the transition period from _____ to _____

Commission file number: 0-12742

SPIRE CORPORATION

(Name of small business issuer as specified in its charter)

MASSACHUSETTS

04-2 57335

(State or other jurisdiction of
incorporation or organization)

(I.R.S. Employer
Identification Number)

ONE PATRIOTS PARK
BEDFORD, MASSACHUSETTS 01730-2396

(Address of principal executive offices)

(781) 275-6000

(Issuer's telephone number, including area code)

Securities registered under Section 12(g) of the Act:

COMMON STOCK, \$0.01 PAR VALUE; REGISTERED ON THE NASDAQ NATIONAL MARKET

(Title of class)

Check whether the issuer is not required to file reports pursuant to Section 13 or 15(d) of the Exchange Act.

Check whether the issuer: (1) filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the past 12 months (or for such shorter period that the issuer was required to file such

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reports); and (2) has been subject to such filing requirements for the past 90 days. Yes No

Check if there is no disclosure of delinquent filers in response to Item 405 of Regulation S-B contained in this form, and no disclosure will be contained, to the best of issuer's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-KSB or any amendment to this Form 10-KSB.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

The issuer's revenues for its most recent fiscal year: \$22,422,000.

The aggregate market value of the voting stock held by non-affiliates of the issuer based on the last sale price of such stock as reported by The Nasdaq National Market on March 1, 2006, was approximately \$46,186,000.

The number of shares outstanding of the issuer's common stock, as of March 1, 2006, was 7,247,987.

Transitional Small Business Disclosure Format (Check One): Yes No

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the definitive proxy statement for the Special Meeting in Lieu of 2006 Annual Meeting of Stockholders to be held on May 18, 2006, are incorporated by reference in Part III of this Report.

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SPIRE CORPORATION
FORM 10-KSB
FOR THE YEAR ENDED DECEMBER 31, 2005

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FORWARD-LOOKING STATEMENTS

THIS REPORT CONTAINS FORWARD-LOOKING STATEMENTS WITHIN THE MEANING OF SECTION 27A OF THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND SECTION 21E OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED (THE "EXCHANGE ACT", WHICH STATEMENTS INVOLVE RISKS AND UNCERTAINTIES. THESE STATEMENTS RELATE TO OUR FUTURE PLANS, OBJECTIVES, EXPECTATIONS AND INTENTIONS. THESE STATEMENTS MAY BE IDENTIFIED BY THE USE OF WORDS SUCH AS "MAY", "COULD", "WOULD", "SHOULD", "WILL", "EXPECTS", "ANTICIPATES", "INTENDS", "PLANS", "BELIEVES", "ESTIMATES" AND SIMILAR EXPRESSIONS. OUR ACTUAL RESULTS AND TIMING OF CERTAIN EVENTS COULD DIFFER MATERIALLY FROM THOSE DISCUSSED IN THESE STATEMENTS. FACTORS THAT COULD CONTRIBUTE TO THESE DIFFERENCES INCLUDE BUT ARE NOT LIMITED TO, THOSE DISCUSSED UNDER "RISK FACTORS", "MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS", AND ELSEWHERE IN THIS REPORT. THE CAUTIONARY STATEMENTS MADE IN THIS REPORT SHOULD BE READ AS BEING APPLICABLE TO ALL FORWARD-LOOKING STATEMENTS WHEREVER THEY APPEAR IN THIS REPORT.

PART I

ITEM 1. DESCRIPTION OF BUSINESS

Spire Corporation ("Spire" or the "Company") is a Massachusetts corporation incorporated in 1969. Our principal offices are located at One Patriots Park, Bedford, Massachusetts, and our phone number is (781) 275-6000. Our SEC filings are available through our website, www.spirecorp.com. Our common stock trades on the Nasdaq National Market under the symbol "SPIR".

PRINCIPAL PRODUCTS AND SERVICES

Overview

The Company develops, manufactures and markets highly-engineered products and services in four principal business areas: solar equipment, solar systems, biomedical and optoelectronics, generally bringing to bear expertise in materials technologies, surface science and thin films across all four business areas. In some cases, such as IONGUARD(R) processing of orthopedic devices, commercial services are well established, while in other cases, commercialization is just beginning.

In the solar equipment area, the Company develops, manufactures and markets specialized equipment for the production of terrestrial photovoltaic modules from solar cells. The Company's equipment has been installed in approximately 170 factories in 43 countries.

In the solar systems area, the Company provides custom and building integrated photovoltaic (BIPV) modules, stand-alone emergency power back up and electric power grid-connected distributed power generation systems employing

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photovoltaic technology developed by the Company.

In the biomedical area, the Company provides value-added surface treatments to manufacturers of orthopedic and other medical devices that enhance the durability, antimicrobial characteristics or other material characteristics of their products; develops and markets hemodialysis catheters and related devices for the treatment of chronic kidney disease and performs sponsored research programs into practical applications of advanced biomedical and biophotonic technologies.

In the optoelectronics area, the Company provides custom compound semiconductor foundry and fabrication services on a merchant basis to customers involved in biomedical/biophotonics instruments, telecommunications and defense applications. Services include compound semiconductor wafer growth, other thin film processes and related device processing and fabrication services. The Company also provides materials testing services and performs services in support of sponsored research into practical applications of optoelectronic technologies.

Solar Equipment

Solar photovoltaics, the direct conversion of sunlight into electricity, is an important source of distributed power that can be employed locally or connected to a power grid. Spire believes that it is one of the world's leading suppliers of the manufacturing equipment and technology needed to manufacture solar photovoltaic power systems. Spire's individual items of manufacturing equipment and its SPI-LINETM integrated turnkey wafer, cell, and module production lines are designed to

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meet the needs of a broad range of customers ranging from small manufactures relying on mostly manual processes to the largest photovoltaic manufacturing companies in the world.

Spire equipment spans the full process for fabricating photovoltaic modules including:

- o Sorting solar cells into performance groups (current groups at load voltage);
- o Assembling and soldering strings of cells interconnected with metal ribbons or "tabs";
- o Completing the module circuit by soldering bus ribbons to connect the strings together;
- o Cutting polymer, fiberglass, and back cover to length and assembling them with the glass and module circuit in preparation for encapsulation;
- o Laminating the module assembly and curing the encapsulating polymer;
- o Final assembly, including edge trimming, installing an edge gasket and frame, and attaching a junction box;
- o Performing a high voltage isolation test to guarantee voltage isolation between the cell circuit and the module frame; and
- o Electrically testing the module performance by measuring a current-voltage curve under simulated sunlight.

The fabrication of photovoltaic modules uses solar cells and module materials as input and produces functional PV modules, ready for use. The Company provides the necessary equipment and training for implementing these process steps as individual equipment items and as fully integrated production lines.

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Spire Solar Systems

Spire Solar Chicago was the principal business unit of the Company's solar systems business segment until September 30, 2005. Spire Solar Chicago provided clients in the Chicago metropolitan area with grid-connected distributed photovoltaic ("PV") systems and custom modules to meet their demand for solar electricity. The business was a vertically integrated manufacturing and system design company whose team of experienced professionals offers complete project management, installation coordination, and customer service.

Through collaboration with the City of Chicago Department of Environment and Commonwealth Edison ("ComEd"), a subsidiary of Exelon Corporation, Spire Solar Chicago developed approximately \$12 million in PV systems. In addition, the State of Illinois had a renewable energy subsidy program that funded up to 60% of the total cost for an installed PV system. Spire Solar Chicago provided its customers with grant application services, as well as utility interconnect service, to take advantage of this subsidy program. Spire Solar Chicago had a business relationship with BP Solarex ("BPS") for acquisition of manufacturing materials and had assisted BPS in its local systems design until September 30, 2005. On August 16, 2005, the Company entered into a Settlement and Contract Termination Agreement (the "Termination Agreement") with BPS effective September 30, 2005. Under the terms of the Termination Agreement, the Company and BPS agreed to terminate their relationship including an existing purchase commitment that the Company had executed previously. In exchange for release of the purchase commitment, the Company paid BPS \$275,000 and retained ownership of the production equipment. The unamortized unearned purchase discount as of the effective date was approximately \$1,205,000 and the net book value of the production equipment was approximately \$287,000. As result of this action, Spire reevaluated the recoverability of the long-lived assets associated with this segment as part of its third quarter review. Based on cash flow projections for the Solar System segment, the Company determined that the production equipment was impaired and should be written-off.

The Company has recorded an approximate \$593,000 gain from these actions, which is reflected as a gain on extinguishment of purchase commitment in the accompanying consolidated statement of operations for the year ended December 31, 2005. The components of this gain are outlined below:

| | |
|---|--------------|
| Unearned purchase discount | \$ 1,205,000 |
| Net book value of production equipment | (287,000) |
| Payment to extinguish purchase commitment | (275,000) |
| Accrued relocation costs | (50,000) |
| | ----- |
| Gain on extinguishment of purchase commitment | \$ 593,000 |
| | ===== |

The Company continues to pursue the PV system product line through its Bedford, Chicago and Florida operations primarily focused on the building integrated photovoltaic market.

Spire Biomedical

Spire Biomedical is both a manufacturer of medical devices and a provider of advanced medical device surface treatment processes. Spire Biomedical's medical device business develops, manufactures, and sells premium products for

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vascular access in chronic kidney disease patients. Spire Biomedical's surface treatment business modifies the surfaces of medical devices to improve their performance.

Spire Biomedical's line of long-term hemodialysis catheters is defined to combine high level performance with increased catheter placement options. The Company's proprietary catheter products provide higher flow at lower pressures and superior kink-resistance. Its patented separated distal tip design minimizes recirculation and provides a wider margin of functionality compared to conventional staggered tip designs. The Company believes that these key features present the renal care community with attractive value and performance for patient care.

The Company offers its medical customers a family of process services utilizing ion beam technologies to enhance both the surface characteristics and the performance of medical devices. The Company's advanced surface modification technology services employ proprietary Ion Implantation and Ion Beam Assisted Deposition ("IBAD") techniques to improve the performance of medical components. Spire's customized surface treatments meet a variety of needs, including reduced friction, wear and abrasion, infection resistance, enhanced tissue and bone growth, increased thromboresistance, conductivity, improved radiopacity and the improvement of other performance characteristics. Spire-treated products currently include orthopedic prostheses (such as replacement hips, knees, elbows), catheters, guidewires, ear-nose-throat devices, vascular grafts, and other specialty medical devices.

Bandwidth Semiconductor

Bandwidth Semiconductor, the principal business unit of the Company's optoelectronics business segment, operates in a state-of-the-art semiconductor foundry and fabrication facility in Hudson, New Hampshire equipped with the most advanced and sophisticated metal-organic chemical vapor deposition ("MOCVD") and fabrication equipment. Our fabrication facility has been designed to have the flexibility to engage in quick-turn research and prototyping as well as for economical full-rate volume production services in three primary areas: MOCVD epitaxial wafers, device foundry services, and thin film circuits.

Our MOCVD epitaxial wafer services include a wide range of compound semiconductor (chiefly gallium arsenide and indium phosphide-based compounds) epitaxial structures fabricated to our customers' designs or in some cases to our own designs. We recognize that time-to-market is critical to our customers' success, so we strive to provide the fastest turnaround times possible. Bandwidth Semiconductor has a number of standard structures available to meet many device needs and speed prototype development. Our epitaxial engineers work closely with customers to develop and improve proprietary structures for specific applications. Typical applications include: Vertical Cavity Surface Emitting Lasers ("VCSEL"), optical waveguides, high power edge emitting lasers, photocathodes, high electron mobility transistors ("HEMT"), field effect transistors ("FET"), "PIN" photodetectors, avalanche photo-detectors ("APD") and other gallium arsenide-on-silicon, lattice mismatched indium gallium arsenide photodetectors, strained quantum well and other compound semiconductor material structures.

Our foundry services can take compound semiconductor wafers up to 4 inches in diameter through processing, on-wafer test, and die separation. We can use customer-supplied photomasks or develop a new set of masks for an entire process sequence. We design the process steps and conditions to meet the desired device characteristics and implement the process in our fabrication facility, saving our customers development time and providing a source of proprietary devices without the expense of a dedicated internal fabrication. Typical OEM devices we have fabricated include single-element photodetectors, photodetector arrays,

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VCSELS, edge-emitting lasers, thermo-photovoltaic ("TPV") cells and communications-quality light emitting diodes ("LED").

Our thin film circuit services include the fabrication of custom structures, chip resistors and resistor arrays to customer orders using thin film technology on alumina ceramic, aluminum nitride, ferrite, glass, quartz, sapphire and silicon substrates using a variety of metals and alloys.

PRINCIPAL DISTRIBUTION METHODS

The Company's products and services are sold primarily by its direct, internal sales staff with four notable exceptions: in certain offshore markets, the

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Company's solar equipment is sold via independent sales representatives, the Company's hemodialysis catheter products are sold via independent distributors, proposals for sponsored research and development work are prepared by the Company's scientists and researchers, and, in certain locations, the Company has granted exclusive licenses to third parties to sell their products.

PHYSICIAN RELATIONSHIPS

We have engaged certain physicians to serve as consultants to the Company. These physicians enter into written contracts that specify their duties and fix their compensation for periods of one or more years. The compensation for these consultants is the result of arm's length negotiations and generally depends upon competitive factors in the local market, the physician's professional qualifications and the specific duties and responsibilities of the physician.

COMPETITIVE CONDITIONS

The markets in which the Company operates are highly competitive and characterized by changes due to technological improvements and developments. The Company competes with many other manufacturers and service providers in each of its product and service areas; many of these competitors have greater resources and sales. Additionally, the Company's products and services compete with products and services utilizing alternative technologies. For example, the Company's solar photovoltaic systems compete with other forms of renewable energy such as wind, solar thermal, and geo-thermal. Price, service and product performance are significant elements of competition in the sale of each of the Company's products. The Company believes that there are considerable barriers to entry into the markets it serves, including a significant investment in specialized capital equipment and product design and development, and the need for a staff with sophisticated scientific and technological knowledge.

SOURCES AND AVAILABILITY OF RAW MATERIALS

Principal raw materials purchased by the Company include polymer extrusions, molded plastic parts, silicon photovoltaic cells, compound semiconductor wafer substrates, high purity industrial gases, custom metal welded structures, fasteners, position sensors, electrical motors, electrical power conditioning inverters, and electrical controls. All of these items are available from several suppliers and the Company generally relies on more than one supplier for each item. There has been increased demand for semiconductor grade silicon during the past year. To date, the Company has not experienced any adverse effects as a result of this increased demand. However, the shortage in semiconductor grade silicon could have an adverse effect on the ordering patterns of our solar equipment customers.

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SOURCES AND AVAILABILITY OF MANUFACTURING SERVICES

The Company employs an outsourcing-model supply chain in its biomedical products business by which certain manufacturing services, such as polymer extrusion, assembly, packaging and sterilization, are obtained from third party contractors. The Company has identified multiple potential sources for the services it requires; however, certain elements of the supply chain currently involve only one qualified contractor. As sales volume expands, the Company plans to reassess its supply chain to eliminate potential "bottlenecks" and reduce dependence on sole-source, single site contract services.

DEPENDENCE ON MAJOR CUSTOMERS

During the year ended December 31, 2005, no customer accounted for more than 10% of consolidated net sales and revenues.

KEY LICENSES AND PATENTS, GOVERNMENT RIGHTS TO INTELLECTUAL PROPERTY

In October 2002, the Company sold an exclusive patent license for its hemodialysis split-tip catheter to Bard Access Systems, Inc. ("Bard"), a wholly owned subsidiary of C.R. Bard, Inc., in exchange for \$5 million upon the execution of the agreement, with another \$5 million due upon the attainment of certain milestones no later than 18 months after signing, and a total of \$6 million upon achievement of certain milestones by Bard through 2005. In June 2005, the Company received the final contingent payment of \$3 million. In connection with the sale, the Company also received a sublicense that permits the Company to continue to manufacture and market hemodialysis catheters for the treatment of chronic kidney disease.

On May 26, 2005, the Company entered into a global consortium agreement (the "Consortium Agreement") with Nisshinbo Industries, Inc. ("Nisshinbo") for the development, manufacturing, and sales of solar photovoltaic module manufacturing equipment. Under the terms of the Consortium Agreement, Nisshinbo purchased a license to manufacture

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and sell the Company's module manufacturing equipment for an upfront fee plus additional royalties based on ongoing equipment sales over a ten-year period. In addition, the Company and Nisshinbo agreed, but are not obligated, to pursue joint research and development, product improvement activities and sales and marketing efforts. On June 27, 2005, the Company received JPY 400,000,000 (approximately \$3.7 million) from the sale of this permanent license. The Company has determined the fair value of the license and royalty based on an appraisal. As a result, a \$3,319,600 gain has been recognized as a gain on sale of license in the accompanying consolidated statement of operations for the year ended December 31, 2005. The balance of \$350,000 was determined to represent an advanced royalty payment and was recorded as an advance on contracts in progress. This amount is being accreted as royalty income over the ten year license period on a straight line basis. Approximately \$86,000 of royalty income was recognized during the year ended December 31, 2005.

Through over 30 years of research and development, the Company has accumulated extensive scientific and technological expertise. The Company protects its technological advances as trade secrets, in part through confidentiality agreements with employees, consultants and third parties. The Company also seeks and enforces patents as appropriate. The Company currently has 34 issued United States patents, one of which is jointly owned, eleven patents pending in the United States, and five foreign patents pending, all of which cover elements of its materials and processing technologies.

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The United States government retains the right to obtain a patent on any invention developed under government contracts as to which the Company does not seek and obtain a patent, and may require the Company to grant a third party license of such invention if steps to achieving practical application of the invention have not been taken. The United States government also retains a non-exclusive, royalty-free, non-transferable license to all technology developed under government contracts, whether or not patented, for government use, including use by other parties to United States government contracts. Furthermore, the Company's United States government contracts prohibit the Company from granting exclusive rights to use or sell any inventions unless the grantee agrees that any product using the invention will be manufactured substantially in the United States.

GOVERNMENT REGULATION OF MEDICAL PRODUCTS

The Company's hemodialysis catheters and accessory products require the approval of the United States Food & Drug Administration ("FDA") prior to sale within the United States. Sales within the European Union ("EU") require the CE Mark certification and sales within Canada require a medical device license issued by Health Canada.

Within the United States, the process requires that a pre-market notification (the "510(k) Submission") be made to the FDA to demonstrate that the device is as safe and effective, substantially equivalent to a legally marketed device that is not subject to pre-market approval. FDA guidance documents are used to prepare the 510(k) Submission. Applicants must compare this device to one or more similar devices commercially available in the United States, known as the "predicate" device(s), and make and support their substantial equivalency claims. Applicants must submit descriptive data and performance data to establish that the device is substantially equivalent to a predicate device. In some instances, data from human clinical trials must also be submitted in support of a 510(k) Submission. If so, the data must be collected in a manner that conforms to specific requirements in accordance with federal regulations. The FDA must issue a 510(k) letter order finding substantial equivalence before commercial distribution can occur. Upon receipt of the 510(k) application by the FDA, up to a 90-day response period is allowed before the FDA must respond.

The Company currently holds all required approvals and certifications to market its hemodialysis catheters and accessory products in the USA, EU and Canada. The Company is committed to maintaining these critical approvals and certifications and the stringent quality requirements applicable to the development, testing, manufacturing, labeling, marketing and distribution of these products.

GOVERNMENT REGULATION OF CONTRACTS

The Company's United States government contracts are subject to a large number of federal regulations and oversight requirements. Compliance with the array of government regulations requires extensive record keeping and the maintenance of complex policies and procedures relating to all aspects of the Company's business, as well as to work performed for the Company by any subcontractors. The Company believes that it has put in place systems and personnel to ensure compliance with all such federal regulations and oversight requirements. All contracts with United States government agencies have been audited by the government through December 2003. The governmental audits for the years ended December 31, 2005 and 2004 have not yet been performed. The Company has not incurred substantial losses as a result of these incurred cost audits.

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RESEARCH AND DEVELOPMENT

The Company's policy is to support as much of its research and development as possible through government contract funding, which it recognizes as revenue. Revenues from the Company's research and development contracts funded by the United States government, and their percent of consolidated net sales and revenues were \$3,233,000, or 14%, and \$2,837,000, or 16%, for the years ended December 31, 2005 and 2004, respectively.

The Company's contracts with the United States government grant to the Company proprietary rights in any technology developed pursuant to such contracts and grant to the United States government a non-exclusive license to utilize the technology for its benefit. The United States government retains the right to obtain the patent on any inventions made under these contracts as to which patent protection is not sought and obtained by the Company. The Company's rights to technology developed under contracts with private companies vary, depending upon negotiated terms.

The Company's internally funded research and development expenditures were \$1,346,000 and \$1,406,000 for the years ended 2005 and 2004, respectively.

ENVIRONMENTAL QUALITY

Compliance with federal, state and local provisions regulating the discharge of materials into the environment has not materially affected the Company's capital expenditures, earnings or its competitive position. Currently there are no lawsuits related to the environment or material administrative proceedings pending against the Company.

EMPLOYEES

At December 31, 2005, the Company had approximately 118 employees, of whom 114 worked full time. The Company also from time to time employs part-time employees and hires independent contractors. The Company's employees are not represented by any collective bargaining agreement, and the Company has never experienced a work stoppage. The Company believes that its employee relations are good.

RISK FACTORS

In addition to the other information in this Form 10-KSB, the following risk factors inherent in and affecting the business of the Company should be considered. The descriptions in this Form 10-KSB contain forward-looking statements that involve risks and uncertainties. The Company's actual results and the timing of certain events may differ materially from the results and timing described in the forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those described below and in "Management's Discussion and Analysis of Financial Condition and Results of Operations" and above in "Business."

Overview

We believe that our continued success will depend upon our ability to create or acquire scientifically advanced technology, apply our technology cost-effectively across product lines and markets, develop or acquire proprietary products, attract and retain skilled development personnel, obtain patent or other protection for our products, obtain required regulatory approvals, manufacture and successfully market our products either directly or through outside distributors and sales representatives and supply sufficient inventory to meet customer demand. There can be no assurance that we will realize financial benefit from our technology development and application

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efforts, that we will continue to be successful in identifying, developing and marketing new products or enhancing our existing products, or that products or technologies developed by others will not render our products or technologies non-competitive or obsolete.

WE HAVE EXPERIENCED LOSSES FROM OPERATIONS, BEFORE THE SALE OF CERTAIN TECHNOLOGY LICENSES, FOR SEVERAL QUARTERS, AND WE EXPECT THAT OUR OPERATING RESULTS WILL FLUCTUATE IN THE FUTURE.

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We have experienced losses from operations, before the sale of certain technology licenses, in each of the past two full years. These losses have resulted in an accumulated deficit of approximately \$1.6 million as of December 31, 2005. While our revenues have steadily increased since fiscal 2000, they are still not sufficient to cover our operating expenses, and we anticipate that we may sustain future losses from operations as a result. Future fluctuations in operating results may also be caused by a number of factors, many of which are outside our control. Additional factors that could affect our future operating results include the following:

- o Availability of raw materials required to perform the manufacturing or services we provide, particularly in the silicon wafer and solar cell markets;
- o Delays, postponements or cancellations of orders and shipments of our products, particularly in our solar equipment and solar systems businesses where individual order sizes may be large and thus may represent a significant portion of annual revenue;
- o Changes in our receipt of license fees, milestone payments, and royalty payments relating to our intellectual property, some receipts of which are based on the attainment of milestones and licensee sales that are beyond our control;
- o Loss of major customers, particularly as a result of customers changing their own product designs in such ways as reduce or eliminate the need for the manufacturing services we provide;
- o Reductions in the selling prices of our products and services as a result of competitive pressures;
- o Delays in introducing and gaining physician acceptance for new products and product improvements, particularly in our biomedical products business;
- o Disruption in the distributor sales channels by which we bring our biomedical products to market;
- o Variation in capacity, capacity utilization and manufacturing yields within the third party medical contract manufacturing service providers that constitute the supply chain for our biomedical products that, in turn, cause variation in our ability to timely ship our products;
- o Increased competition from current and future competitors;
- o Variation in the timing of customer orders and inventory levels at our customers, particularly within our biomedical manufacturing services business; and
- o Termination of existing grants with government agencies or delays in funding of grants awarded.

If we are unable to reach and sustain profitability from our operations, we risk depleting our working capital balances and our business may not continue as a going concern. In addition, we may need to raise additional capital in order to sustain our operations. There can be no assurance that we will be able to raise such funds if they are required.

OUR ABILITY TO EXPAND REVENUE AND SUSTAIN PROFITABILITY DEPENDS SUBSTANTIALLY ON

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THE STABILITY AND GROWTH OF THE VARIOUS MARKETS FOR OUR PRODUCTS AND SERVICES. SHOULD WE BE UNABLE TO EXPAND OUR REVENUE, OUR ABILITY TO REACH AND SUSTAIN PROFITABILITY WOULD BE IMPAIRED.

- o The world demand for photovoltaic manufacturing equipment depends on sustained expansion in the demand for decentralized power sources, especially in developing countries, and on domestic and foreign government funding of initiatives to invest in solar energy as an alternative to the burning of fossil fuels and other energy production methods. There can be no assurance that government funding for such initiatives will be available, or that solar energy will prove to be a cost-effective alternative to other energy sources and thus gain acceptance where traditional energy sources continue to be available. Should demand for solar photovoltaic power sources not increase, demand for new photovoltaic manufacturing equipment would not materialize and our business would be adversely affected.
- o Most of our research and development revenues are generated by contracts with the United States government. There can be no assurance that the United States government will fund our research and development projects at the same level as it has in the past. Should federal research funding priorities change, and should we be unable to adjust our research focus to reflect the shift, our business could be adversely affected.
- o Our solar systems business unit is dependent on continued and increased order activity from the development of other industrial and residential sales opportunities. Should we be unable to capture a significant stream of new solar system installation projects from a more diverse group of project sponsors, our solar systems business could be adversely affected.

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- o The growth of our biomedical products business depends on increased physician acceptance of our hemodialysis catheter products, our ability to manage the production of higher unit volumes of catheter products and our ability to effectively distribute those products. Should our hemodialysis catheters not gain market acceptance or should we not be able to meet demand for our products, our biomedical products business could be adversely affected.
- o The growth of our biomedical services business depends upon our customers' ability to serve demand for the end-use items, such as orthopedic prostheses, on which our services are performed and thus is substantially beyond our control.
- o Our ability to expand our biomedical business depends upon our ability to introduce new products and services. The marketing of new biomedical products requires pre-approval of government regulatory authorities, the completion of which can be lengthy and more costly than originally planned.
- o The growth of our optoelectronics business depends upon growth in demand for compound semiconductor wafers from manufacturers of microwave and optoelectronic circuits and sensors that, in turn, are used in diverse biomedical, telecommunications and aerospace products. Should these end-use markets not experience anticipated levels of growth and, in the case of telecommunications uses, experience a recovery from currently depressed business levels, our optoelectronics business could be adversely affected.

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WE HAVE NOT CONSISTENTLY COMPLIED WITH NASDAQ'S MARKETPLACE RULES FOR CONTINUED LISTING, WHICH EXPOSES US TO THE RISK OF DELISTING FROM THE NASDAQ NATIONAL MARKET.

Our stock is currently listed on the Nasdaq National Market. In August 2003, we received notice from Nasdaq that the Company was not in compliance with Nasdaq's Marketplace Rules as a result of filing its second quarter Form 10-QSB prior to the completion of the review by the Company's independent auditors and, accordingly, was subject to possible delisting. The Company subsequently filed all reports and was able to maintain its continued listing on the Nasdaq National Market.

In April 2005, the Company received notice from Nasdaq that it was not in compliance with the minimum stockholders' equity level of \$10,000,000 required for continued listing on the Nasdaq National Market. Following the submission of a plan of compliance and making later filings showing this deficiency no longer existed, Nasdaq subsequently notified the Company that it had achieved compliance with the \$10,000,000 stockholders' equity threshold during 2005 and the matter was closed. However, as of December 31, 2005, the Company was not in compliance with the minimum stockholders' equity threshold. As a result, the Company did not meet Standard No. 1 for continued listing on the Nasdaq National Market. However, the Company believes that it does meet Standard No. 2 for continued listing on the Nasdaq National Market as the market value of its listed securities currently exceeds \$50,000,000 and it meets all of the other requirements of Standard No. 2. In order to remain in compliance with Standard No. 2, the Company's market value of listed securities cannot fall below \$50,000,000 for ten consecutive trading days at any point. If the Company fails to maintain compliance with these rules and its common stock is delisted from the Nasdaq National Market, there could be a number of negative implications, including reduced liquidity in the common stock as a result of the loss of market efficiencies associated with the Nasdaq National Market, the loss of federal preemption of state securities laws, the potential loss of confidence by suppliers, customers and employees, as well as the loss of analyst coverage and institutional investor interest, fewer business development opportunities and greater difficulty in obtaining financing.

OUR BUSINESS RELIES IN PART ON A LIMITED NUMBER OF CUSTOMERS, AND UNFAVORABLE DEVELOPMENTS IN RELATION TO A MAJOR CUSTOMER MAY ADVERSELY AFFECT OUR REVENUES, OPERATING RESULTS AND CASH FLOWS.

While no customer accounted for more than 10% of consolidated net sales and revenues in fiscal 2005, in the past we have had such customers and may have them again in the future. If an unfavorable development were to occur with respect to any significant customer it would likely have a material adverse affect on our business, financial condition, operating results, cash flows and future prospects.

WE SELL OUR PRODUCTS AND SERVICES AGAINST ESTABLISHED COMPETITORS, AND ENTITIES NOW OPERATING IN RELATED MARKETS MAY ENTER OUR MARKETS. SOME OF OUR CURRENT AND POTENTIAL COMPETITORS HAVE GREATER FINANCIAL AND TECHNICAL RESOURCES THAN OURS. SHOULD WE BE UNABLE TO OFFER OUR CUSTOMERS PRODUCTS AND SERVICES THAT REPRESENT ATTRACTIVE PRICE VERSUS VALUE, OUR BUSINESS WOULD SUFFER.

Although we believe that there are considerable barriers to entry into the markets we serve, including a significant investment in specialized capital equipment, product design and development, and the need for a staff with sophisticated scientific and technological knowledge, there can be no assurance that new or existing entities would not seek to enter our markets or that we

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would be able to compete effectively against such entities.

- o In our biomedical products business, our hemodialysis catheter products directly compete against the already established product offerings of larger competitors. Although we believe that our catheter products offer significant advantages, widespread physician acceptance of these products in preference to the more established products of competitors cannot be assured.
- o In our optoelectronics business, our manufacturing services may compete against the internal manufacturing capabilities of our customers. Although we believe that we offer significant advantages in terms of timely response, reduced total cost and reduced capital investment over the captive fabrication facilities of our customers, customers may elect to maintain their internal capabilities despite economic incentives to outsource these services from us.

IF WE ARE UNABLE TO DEVELOP AND INTRODUCE NEW PRODUCTS SUCCESSFULLY OR TO ACHIEVE MARKET ACCEPTANCE OF OUR NEW PRODUCTS, OUR OPERATING RESULTS WOULD BE ADVERSELY AFFECTED.

We compete in markets characterized by technological advances and improvements in manufacturing efficiencies. Our ability to operate profitably depends in large part on our timely access to, or development of, technological advances, and on our ability to use those advances to improve existing products, develop new products and manufacture those products efficiently. There can be no assurance that we will realize financial benefit from our development programs, will continue to be successful in identifying, developing and marketing new products or enhancing our existing products, or that products or technologies developed by others will not render our products or technologies non-competitive or obsolete. The failure to introduce new or enhanced products on a timely and cost competitive basis, or to attain market acceptance for commercial products, could have a material adverse effect on our business, results of operations or financial condition.

IF WE ARE NOT SUCCESSFUL IN PROTECTING OUR INTELLECTUAL PROPERTY RIGHTS, OUR ABILITY TO COMPETE MAY BE HARMED.

We rely on a combination of patent, copyright, trademark and trade secret protections as well as confidentiality agreements and other methods, to protect our proprietary technologies and processes. For example, we enter into confidentiality agreements with our employees, consultants and business partners, and control access to and distribution of our proprietary information. We have been issued 34 United States patents, one of which is jointly owned, and have a number of pending patent applications. However, despite our efforts to protect our intellectual property, we cannot assure that:

- o The steps we take to prevent misappropriation or infringement of our intellectual property will be successful;
- o Any existing or future patents will not be challenged, invalidated or circumvented;
- o Any pending patent applications or future applications will be approved;
- o Others will not independently develop similar products or processes to ours or design around our patents; or
- o Any of the measures described above would provide meaningful protection.

A failure by us to meaningfully protect our intellectual property could have a material adverse effect on our business, financial condition, operating results and ability to compete. In addition, effective patent, copyright, trademark and trade secret protection may be unavailable or limited in certain

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countries.

WE DEPEND ON OTHERS, PARTICULARLY ON AGENCIES OF THE UNITED STATES GOVERNMENT, FOR FUNDING OUR RESEARCH AND DEVELOPMENT EFFORT.

Substantially all of our research and development work is funded by agencies of the United States government either directly or via their contractors. Loss of outside funding may materially adversely affect our ability to further develop our proprietary technologies and to apply these technologies to our current products and products under development. If we are unable to maintain our current level of such funding for any reason, we would need to generate funds for such research from other sources, reduce our research and development effort or increase our internal funding for research and development. An increase in internally funded research and development would have a negative impact on our profitability.

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Additionally, the process of bidding for, obtaining, retaining and performing United States government contracts is subject to a large number of United States government regulations and oversight requirements. Compliance with these government regulations requires extensive record keeping and the maintenance of complex policies and procedures relating to all aspects of our business, as well as to work performed for us by any subcontractors. Any failure to comply with applicable regulations, or to require our subcontractors so to comply, could result in a variety of adverse consequences, ranging from remedial requirements to termination of contracts, reimbursement of fees, reduction of fees on a going forward basis and prohibition from obtaining future United States government contracts. While we believe that we have in place systems and personnel to ensure compliance with all United States government regulations relating to contracting, we cannot assure that we will at all times be in compliance or that any failure to comply will not have a material adverse effect on our business, results of operations or financial condition.

THE U.S. GOVERNMENT HAS CERTAIN RIGHTS RELATING TO OUR INTELLECTUAL PROPERTY.

The United States government retains the right to obtain a patent on any invention developed under government contracts as to which the Company does not seek and obtain a patent, and may require the Company to grant a third party license of such invention if steps to achieving practical application of the invention have not been taken. The United States government also retains a non-exclusive, royalty-free, non-transferable license to all technology developed under government contracts, whether or not patented, for government use, including use by other parties to United States government contracts. Furthermore, the Company's United States government contracts prohibit the Company from granting exclusive rights to use or sell any inventions unless the grantee agrees that any product using the invention will be manufactured substantially in the United States.

WE DEPEND ON THIRD-PARTY CONTRACTORS TO MANUFACTURE SUBSTANTIALLY ALL OF OUR CURRENT BIOMEDICAL PRODUCTS.

We depend on third-party subcontractors in the U.S. for the manufacturing, assembly and packaging of our biomedical products. Any difficulty in obtaining parts or services from these subcontractors could affect our ability to meet scheduled product deliveries to customers, which could in turn have a material adverse effect on our customer relationships, business and financial results. Several significant risks are associated with reliance on third-party subcontractors, including:

- o The lack of assured product supply and the potential for product

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- shortages;
- o Reduced control over inventory located at contractors' premises;
- o Limited control over delivery schedules, manufacturing yields, production costs;
- o Direct control over product quality; and
- o The temporary or permanent unavailability of, or delays in obtaining, access to key process technologies.

OUR SUCCESS DEPENDS ON OUR ABILITY TO HIRE AND RETAIN QUALIFIED TECHNICAL PERSONNEL, AND IF WE ARE UNABLE TO DO SO, OUR PRODUCT DEVELOPMENT EFFORTS AND CUSTOMER RELATIONS WILL SUFFER.

Our products require sophisticated manufacturing, research and development, marketing and sales, and technical support. Our success depends on our ability to attract, train and retain qualified technical personnel in each of these areas. Competition for personnel in all of these areas is intense and we may not be able to hire or retain sufficient personnel to achieve our goals or support the anticipated growth in our business. The market for the highly trained personnel we require is very competitive, due to the limited number of people available with the necessary technical skills and understanding of our products and technology. If we fail to hire and retain qualified personnel, our product development efforts and customer relations will suffer.

WE ARE SUBJECT TO ENVIRONMENTAL LAWS AND OTHER LEGAL REQUIREMENTS THAT HAVE THE POTENTIAL TO SUBJECT US TO SUBSTANTIAL LIABILITY AND INCREASE OUR COSTS OF DOING BUSINESS.

Our properties and business operations are subject to a wide variety of federal, state, and local environmental, health and safety laws and other legal requirements, including those relating to the storage, use, discharge and disposal of toxic, volatile or otherwise hazardous substances used in our manufacturing processes. We cannot assure that these legal requirements will not impose on us the need for additional capital expenditures or other requirements. If we fail to obtain required permits or otherwise fail to operate within these or future legal requirements, we may be required to pay substantial penalties, suspend our operations or make costly changes to our manufacturing processes or facilities. Although we believe that we are in compliance and have complied with all applicable legal requirements, we may also be required to incur additional costs to comply with current or future legal requirements.

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OUR INTERNATIONAL SALES SUBJECT US TO RISKS THAT COULD ADVERSELY AFFECT OUR REVENUE AND OPERATING RESULTS.

Sales to customers located outside the U.S. have historically accounted for a significant percentage of our revenue (approximately 33% in 2005) and we anticipate that such sales will continue to be a significant percentage of our revenue. International sales involve a variety of risks and uncertainties, including risks related to:

- o Reliance on strategic alliance partners such as representatives and licensees;
- o Compliance with changing foreign regulatory requirements and tax laws;
- o Reduced protection for intellectual property rights in some countries;
- o Longer payment cycles to collect accounts receivable in some countries;
- o Political instability;
- o Economic downturns in international markets; and
- o Changing restrictions imposed by United States export laws.

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Failure to successfully address these risks and uncertainties could adversely affect our international sales, which could in turn have a material and adverse effect on our results of operations and financial condition.

THE USE OF OUR CATHETER AND OTHER MEDICAL RELATED PRODUCTS ENTAILS A RISK OF PHYSICAL INJURY; THE DEFENSE OF CLAIMS ARISING FROM SUCH RISK MAY EXCEED OUR INSURANCE COVERAGE AND DISTRACT OUR MANAGEMENT.

The use of orthopedic and other medical devices may entail a risk of physical injury to patients. To the extent we have been involved in the design and manufacturing of these products, we may be exposed to potential product liability and other damage claims. Furthermore, the use of our photovoltaic module manufacturing equipment could result in operator injury. Except for those cases brought against us in which it is alleged that we engaged in the manufacture and sale of defective heart valves with other defendants, no other claims of product liability or other damages have been initiated against us. We maintain product liability and umbrella insurance coverage; however, there can be no assurance that any product liability claim assessed against us would not exceed our insurance coverage, or that insurance coverage would continue to be available. While we typically obtain agreements of indemnity from manufacturers of biomedical products for which we provide manufacturing services, there can be no assurance that any such indemnity agreements will be enforceable or that such manufacturers will have adequate funds to meet their obligations under such agreements. The cost of defending a product liability, negligence or other action, and/or assessment of damages in excess of insurance coverage, could have a material adverse effect on our business, results of operations, or financial condition.

OUR COMPANY IS SUBJECT TO CONTROL BY PRINCIPAL STOCKHOLDER.

Roger G. Little, the founder, Chairman of the Board, Chief Executive Officer and President of the Company, controls approximately 31% of the Company's outstanding Common Stock. As a result, Mr. Little is in a position to exert significant influence over actions of the Company which require stockholder approval and generally to direct the affairs of the Company, including potential acquisitions, sales and changes in control of the Company.

WE DO NOT PAY DIVIDENDS AND WE MAY NOT PAY DIVIDENDS IN THE FUTURE.

We have paid no cash dividends since the Company's inception. We anticipate retaining any future earnings for reinvestment in operations and do not anticipate that dividends will be paid in the foreseeable future. Thus, the return on investment should be expected to depend on changes in the market price of our common stock.

THE MARKET PRICE FOR OUR COMMON STOCK HAS BEEN VOLATILE AND FUTURE VOLATILITY COULD CAUSE THE VALUE OF INVESTMENTS IN THE COMPANY TO FLUCTUATE.

Our stock price has experienced significant volatility. While our revenues have increased since 2000, we expect that uncertainty regarding demand for our products will cause our stock price to continue to be volatile. In addition, the value of your investment could decline due to the impact of any of the following factors, among others, upon the market price of our common stock:

- o Additional changes in investment analysts' estimates of our revenues and operating results;
- o Our failure to meet investment analysts' performance expectations; and
- o Changes in market valuations of other companies in the biomedical, alternative energy or semiconductor industries.

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In addition, many of the risks described elsewhere in this section could materially and adversely affect our stock price, as discussed in those risk factors. U.S. financial markets have recently experienced substantial price and volume volatility. Fluctuations such as these have affected and are likely to continue to affect the market price of our common stock.

ITEM 2. DESCRIPTION OF PROPERTY

Our corporate headquarters are located at One Patriots Park, Bedford, Massachusetts. This 77,000 square foot facility is leased and contains our administrative offices, sales and marketing offices, research and development facilities and the manufacturing facilities of the Company's biomedical and solar equipment and systems businesses. The lease expires in November 2007. We lease an approximately 90,000 square foot facility located at 25 Sagamore Park Road, Hudson, New Hampshire that contains a semiconductor wafer growth and fabrication facility and administrative offices used primarily by our Optoelectronics business unit including Bandwidth Semiconductor. The lease expires in May 2008. In addition, the Company leased approximately 16,750 square feet of factory and warehouse space located at the Chicago Center for Green Technology, 445 North Sacramento Boulevard, Chicago, Illinois, that contained administrative offices, sales and marketing offices and manufacturing facilities for its solar systems business including Spire Solar Chicago. The lease terminated in November 2005 and the Chicago operation was relocated to 2,115 sq. ft. at 629 West Cermak, Chicago, Illinois. The Company believes that its facilities are suitable for their present intended purposes and adequate for the Company's current level of operations.

ITEM 3. LEGAL PROCEEDINGS

From time to time, the Company is subject to legal proceedings and claims arising from the conduct of its business operations. The Company does not expect the outcome of these proceedings, either individually or in the aggregate, to have a material adverse effect on its financial position, results of operations, or cash flows.

The Company has been named as a defendant in 58 cases filed from August 2001 to July 2003 in state courts in Texas by persons claiming damages from the use of allegedly defective mechanical heart valves coated by a process licensed by the Company to St. Jude Medical, Inc., the valve manufacturer, which has also been named as a defendant in the cases. In June 2003, a judge in a state court in Harris County, Texas agreed to grant the Company's motion for summary judgment based upon the principle of federal preemption with regard to 57 of those cases and to order that the cases against the Company be dismissed with prejudice. An order to this effect was signed in late July 2003. The remaining case is still pending, and due to aspects of its fact situation is not subject to the principle of federal preemption. From August 2003 to date, a total of seven new cases were filed against the Company in courts in Harris County. Activity with regard to these cases is likely to occur only after the disposition of the original 57 cases is finally settled. The plaintiffs whose cases were dismissed have filed appeals with the Texas appellate court. In June 2005, the Texas Court of Appeals upheld the summary judgment granted by the lower court. Attorneys for the Company anticipate that the plaintiffs may file a motion for rehearing, and an appeal with the Texas Supreme Court is also possible. Attorneys who represent the Company with respect to these cases in Texas do not believe at this time that the actions of a federal district court judge in Minnesota in denying St. Jude Medical's request for summary judgment will materially affect the Company's position in the Texas complaints.

During the second quarter of 2005 a suit was filed by Arrow International,

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Inc. against Spire Biomedical, Inc., a wholly owned subsidiary of the Company, alleging patent infringement by the Company. The complaint claims one of the Company's catheter products induces and contributes to infringement when medical professionals insert it. The Company has responded to the complaint denying all allegations and has filed certain counterclaims. The Company intends to vigorously defend this matter. The parties are engaged in the discovery process.

ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS

No matters were submitted to a vote of the Company's security holders in the fourth quarter of 2005.

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PART II

ITEM 5. MARKET FOR COMMON EQUITY AND RELATED STOCKHOLDER MATTERS

MARKET INFORMATION

The Company's Common Stock, \$0.01 par value ("Common Stock"), is traded on the Nasdaq National Market under the symbol "SPIR." The following chart sets forth the high and low bid prices for the Common Stock for the periods shown:

| | High Bid | Low Bid |
|----------------|----------|---------|
| | ----- | ----- |
| 2005 | | |
| First Quarter | \$ 6.18 | \$ 4.32 |
| Second Quarter | 8.99 | 3.68 |
| Third Quarter | 11.95 | 6.28 |
| Fourth Quarter | 11.24 | 6.56 |
| 2004 | | |
| First Quarter | \$ 6.57 | \$ 4.51 |
| Second Quarter | 7.62 | 4.80 |
| Third Quarter | 5.79 | 3.95 |
| Fourth Quarter | 5.80 | 4.11 |

These prices do not reflect retail mark-ups, mark-downs or commissions and may not reflect actual transactions. The closing price of the Common Stock on March 1, 2006 was \$9.84, and on that date, there were 192 stockholders of record. The number of holders does not include individuals or entities who beneficially own shares but whose shares are held of record by a broker or clearing agency, but does include each such broker or clearing agency as one recordholder.

DIVIDENDS

The Company did not pay any cash dividends during 2005 or 2004 and currently does not intend to pay dividends in the foreseeable future so that we may reinvest our earnings in the development of our business. The payment of dividends in the future will be at the discretion of the Board of Directors.

ITEM 6. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS

OF OPERATIONS

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THIS MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS SECTION AND OTHER PARTS OF THIS REPORT CONTAIN FORWARD-LOOKING STATEMENTS WITHIN THE MEANING OF SECTION 27A OF THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND SECTION 21E OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED (THE "EXCHANGE ACT"), WHICH STATEMENTS INVOLVE RISKS AND UNCERTAINTIES. THESE STATEMENTS RELATE TO OUR FUTURE PLANS, OBJECTIVES, EXPECTATIONS AND INTENTIONS. THESE STATEMENTS MAY BE IDENTIFIED BY THE USE OF WORDS SUCH AS "MAY", "COULD", "WOULD", "SHOULD", "WILL", "EXPECTS", "ANTICIPATES", "INTENDS", "PLANS", "BELIEVES", "ESTIMATES", AND SIMILAR EXPRESSIONS. THE COMPANY'S ACTUAL RESULTS AND THE TIMING OF CERTAIN EVENTS MAY DIFFER SIGNIFICANTLY FROM THE RESULTS AND TIMING DESCRIBED IN THE FORWARD-LOOKING STATEMENTS. FACTORS THAT COULD CAUSE OR CONTRIBUTE TO SUCH DIFFERENCES INCLUDE, BUT ARE NOT LIMITED TO, THOSE FACTORS DESCRIBED BELOW AND ABOVE IN "RISK FACTORS" AND "BUSINESS." THE FOLLOWING DISCUSSION AND ANALYSIS OF THE COMPANY'S FINANCIAL CONDITION AND RESULTS OF OPERATIONS SHOULD BE READ IN LIGHT OF THOSE FACTORS AND IN CONJUNCTION WITH, THE COMPANY'S ACCOMPANYING CONSOLIDATED FINANCIAL STATEMENTS, INCLUDING THE NOTES THERETO.

OVERVIEW

Spire Corporation (the "Company") develops, manufactures and markets highly-engineered products and services in four principal business areas: solar equipment, solar systems, biomedical and optoelectronics bringing to bear expertise in materials technologies across all four business areas, discussed below.

In the solar equipment area, the Company develops, manufactures and markets specialized equipment for the production of terrestrial photovoltaic modules from solar cells. The Company's equipment has been installed in approximately 170 factories in 43 countries.

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In the solar systems area, the Company provides custom and building integrated photovoltaic modules, stand alone emergency power backup and electric power grid-connected distributed power generation systems employing photovoltaic technology developed by the Company.

In the biomedical area, the Company provides value-added surface treatments to manufacturers of orthopedic and other medical devices that enhance the durability, antimicrobial characteristics or other material characteristics of their products; develops and markets hemodialysis catheters and related devices for the treatment of chronic kidney disease and performs sponsored research programs into practical applications of advanced biomedical and biophotonic technologies.

In the optoelectronics area, the Company provides compound semiconductor foundry services on a merchant basis to customers involved in biomedical/biophotonic instruments, telecommunications and defense applications. Services include compound semiconductor wafer growth, other thin film processes and related device processing and fabrication services. The Company also provides materials testing services and performs services in support of sponsored research into practical applications of optoelectronic technologies.

Operating results will depend upon product mix, as well as the timing of shipments of higher priced products from the Company's solar equipment line and delivery of solar systems. Export sales, which amounted to 33% of net sales and revenues for 2005, continue to constitute a significant portion of the Company's net sales and revenues.

RESULTS OF OPERATIONS

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The following table sets forth certain items as a percentage of net sales and revenues for the periods presented:

| | Year Ended December 31, | |
|---|-------------------------|--------|
| | 2005 | 2004 |
| Net sales and revenues | 100% | 100% |
| Cost of sales and revenues | (85) | (85) |
| | ----- | ----- |
| Gross profit | 15 | 15 |
| Selling, general and administrative expenses | (38) | (47) |
| Internal research and development expenses | (6) | (8) |
| Gain on extinguishment of purchase commitment | 3 | -- |
| Gain on sales of licenses | 28 | 18 |
| | ----- | ----- |
| Earnings (loss) from operations | 2 | (22) |
| Other expense, net | (2) | (2) |
| | ----- | ----- |
| Earnings (loss) before income taxes | -- | (24) |
| Income tax expense (benefit) | -- | -- |
| | ----- | ----- |
| Net earnings (loss) | -- % | (24) % |
| | ===== | ===== |

OVERALL

The Company's total net sales and revenues for the year ended December 31, 2005 ("2005") increased 30% compared to the year ended December 31, 2004 ("2004"). The increase was attributable to increases within all business units.

SOLAR BUSINESS UNIT

Sales in the Company's solar business unit increased 57% during 2005 as compared to 2004 primarily due to a 289% increase in solar equipment sales resulting from the volume and timing of the delivery of equipment partially offset by a 47% decrease in solar systems sales.

BIOMEDICAL BUSINESS UNIT

Revenues of the Company's biomedical business unit increased 19% during 2005 as compared to 2004 as a result of a 47% increase in revenue from Spire's line of hemodialysis catheters and a 34% increase in revenue from Spire's research and development activities.

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OPTOELECTRONICS BUSINESS UNIT

Sales in the Company's optoelectronics business unit increased 3% during 2005.

Year Ended December 31, 2005 Compared to Year Ended December 31, 2004

 Net Sales and Revenues

The following table categorizes the Company's net sales and revenues for

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the periods presented:

| | Year Ended December 31, | | Increase/ (Decrease) | |
|---|-------------------------|--------------|----------------------|-----|
| | 2005 | 2004 | \$ | % |
| Contract research, service and license revenues | \$11,151,000 | \$10,273,000 | \$ 878,000 | 9% |
| Sales of goods | 11,271,000 | 7,005,000 | 4,266,000 | 61% |
| Net sales and revenues | \$22,422,000 | \$17,278,000 | \$ 5,144,000 | 30% |

The 9% increase in contract research, service and license revenues for the year ended December 31, 2005 as compared to the year ended December 31, 2004 is primarily attributable to an increase in research and development activities. Revenues from the Company's research and development activities increased 34% in 2005 as compared to 2004 primarily due to an increase in the number and dollar value of contracts associated with government and third party funded research and development.

The 61% increase in sales of goods for the year ended December 31, 2005 as compared to the year ended December 31, 2004 was primarily due to an increase in solar equipment revenues and, to a lesser extent, an increase in biomedical product sales. These increases were partially offset by a decrease in solar system revenue. Solar equipment revenues increased 289% in 2005 as compared to 2004 due to the volume and timing of the delivery of equipment. The 2005 results include the sale of four photovoltaic module production lines in 2005 versus none in 2004. Biomedical product sales increased 47% in 2005 as compared to 2004 as a result of increased demand for the Company's line of hemodialysis catheters. Solar systems revenues decreased 47% in 2005 as compared to 2004 due to a decline in customer orders primarily resulting from decreased funding under agreements with Commonwealth Edison, a subsidiary of Exelon Corporation and the City of Chicago. These agreements terminated on December 31, 2004 and December 15, 2003, respectively.

Cost of Sales and Revenues

The following table categorizes the Company's cost of sales and revenues for the periods presented, stated in dollars and as a percentage of related sales and revenues:

| | Years Ended December 31, | | | | Increase/ (Decrease) | |
|--|--------------------------|-----|--------------|-----|----------------------|-----|
| | 2005 | % | 2004 | % | \$ | % |
| Cost of contract research, services and licenses | \$ 8,779,000 | 79% | \$ 8,264,000 | 80% | \$ 515,000 | 6% |
| Cost of goods sold | 10,322,000 | 92% | 6,355,000 | 91% | 3,967,000 | 62% |
| Net cost of sales and revenues | \$19,101,000 | 85% | \$14,619,000 | 85% | \$ 4,482,000 | 31% |

The \$515,000 (6%) increase in cost of contract research, services and licenses in 2005 is primarily due to a 45% increase in the cost of the Company's research and development activities associated with its 34% increase in revenues and a 10% increase in Bandwidth costs associated with its 3% increase in revenues. Bandwidth's costs increased more than its revenues primarily due to

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product mix. These increases were partially offset by an 11% decrease in the cost of the Company's biomedical processing services versus only a 1% decrease in revenues. Cost of contract research, services and licenses as a percentage of revenue decreased 1% primarily due to margin improvement within the biomedical processing services product line partially offset by lower margins within the biomedical research and development product line and Bandwidth segment.

The \$3,967,000 (62%) increase in cost of goods sold is primarily due to an 186% increase in the Company's solar equipment direct costs resulting from its 289% increase in revenues and, to a lesser extent, a 30% increase in the

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biomedical products unit's direct costs resulting from its 47% increase in revenues. These increases were partially offset by a 21% decrease in the cost of the Company's solar systems business resulting from its 47% decrease in revenues. The 1% increase in cost of goods sold as a percentage of revenue is primarily the result of lower than expected contribution margins in the solar systems segment and a higher percentage of solar equipment sales, which have historically generated lower margins. These effects were substantially offset by improved contribution margins in the Company's solar equipment and biomedical products group.

OPERATING EXPENSES

The following table categorizes the Company's operating expenses for the periods presented, stated in dollars and as a percentage of sales and revenues:

| | Years Ended December 31, | | | | Increase/ (Decrease) | |
|-------------------------------------|--------------------------|-----|-------------|-----|----------------------|------|
| | 2005 | % | 2004 | % | \$ | % |
| Selling, general and administrative | \$8,539,000 | 38% | \$8,097,000 | 47% | \$ 442,000 | 5% |
| Internal research and development | 1,346,000 | 6% | 1,406,000 | 8% | (60,000) | (4%) |
| Operating expenses | \$9,885,000 | 44% | \$9,503,000 | 55% | \$ 382,000 | 4% |

INTERNAL RESEARCH AND DEVELOPMENT EXPENSES

The decrease in internal research and development expenses in 2005 versus 2004 was primarily due to decreased development efforts within the solar equipment and biomedical services groups. These decreases were substantially offset by increased development efforts within the biomedical products group. The decrease in internal research and development expenses as a percentage of sales and revenues was primarily due to the increase in sales and revenues.

SELLING, GENERAL AND ADMINISTRATIVE EXPENSES

The increase in selling, general and administrative expenses in 2005 versus 2004 was due primarily to increased cost associated with sales and marketing efforts of the Company's Bandwidth, biomedical products and solar equipment product lines due to the 30% increase in net sales and revenues and increased building and building related expense. These increases were partially offset by decreased cost associated with general business insurance. The decrease in selling, general and administrative expenses as a percentage of sales and revenues was primarily due to the increase in sales and revenues partially offset by the dollar increase in selling, general and administrative costs

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discussed above.

OTHER EXPENSE, NET

The Company earned \$74,000 and \$52,000 of interest income for the years ended December 31, 2005 and 2004, respectively. The Company incurred interest expense of \$274,000 and \$328,000 for the years ended December 31, 2005 and 2004, respectively. The interest expense is primarily associated with interest incurred on capital leases associated with the semiconductor foundry.

For the year ended December 31, 2005, the Company recorded \$104,000 of currency transaction loss related to the conversion of a Japanese Yen account into U.S. dollars.

INCOME TAXES

The Company did not record an income tax provision for years ended December 31, 2005 and 2004 as earnings (loss) before income taxes is expected to be substantially offset by net operating loss carryforwards of approximately \$6.2 million. A valuation allowance was provided against the deferred tax assets generated in 2005 and 2004 due to uncertainty regarding the realization of the net operating loss in the future. At December 31, 2005, the Company had gross deferred tax assets of \$3,372,000, against which a valuation allowance of \$2,182,000 had been applied. Gross deferred tax liabilities of \$190,000 were applied against the net deferred tax asset.

NET EARNINGS (LOSS)

The Company reported net earnings for the year ended December 31, 2005 of \$44,000, compared to a net loss of \$4,120,000 in 2004. The increase in net earnings in 2005 versus 2004 is primarily due to the \$3.3 million gain on the sale

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of a license to the Company's solar technology and, to a lesser extent, the 30% increase in sales and revenues and the \$593,000 gain on extinguishment of purchase commitment. These increases were partially offset by the increase in selling, general and administrative expenses discussed above.

LIQUIDITY AND CAPITAL RESOURCES

| | December 31, 2005 | December 31, 2004 | Increase | |
|---------------------------|----------------------|----------------------|------------|-----|
| | | | \$ | % |
| Cash and cash equivalents | \$3,630,000 | \$3,337,000 | \$ 293,000 | 9% |
| Working capital | 5,270,000 | 3,996,000 | 1,274,000 | 32% |

Cash and cash equivalents increased primarily due to the proceeds from sale of licenses and proceeds from the exercise of stock options substantially offset by cash used in operations and, to a lesser extent, investments in property and equipment and payments on capital leases.

The Company has historically funded its operating cash requirements using operating cash flow and proceeds from the sale and licensing of technology. The Company's liquidity position benefitted as a result of cash receipts of \$3,000,000 in both 2005 and 2004, arising from the sale of a hemodialysis patent license to Bard Access Systems. The Company received its final \$3,000,000 payment under this arrangement in June 2005. In addition, the Company received

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JPY 400,000,000 (approximately \$3.7 million) in June 2005 from the sale of a license to the Company's solar technology.

The Company has a \$2,000,000 Loan Agreement (the "Agreement") with Citizens Bank of Massachusetts (the "Bank"). The Agreement provides Standby Letter of Credit guarantees for certain foreign and domestic customers, which are 100% secured with cash. At December 31, 2005, the Company had \$926,000 of restricted cash associated with outstanding Letters of Credit. Standby Letters of Credit under this Agreement bear interest at 1%. The Agreement also provides the Company with the ability to convert to a \$2,000,000 revolving line of credit, based upon eligible accounts receivable and certain conversion covenants. Loans under this revolving line of credit bear interest at the Bank's prime rate as determined plus 1/2% (7.75% at December 31, 2005.) At December 31, 2005, the Company had not exercised its conversion option and no amounts were outstanding under the revolving line of credit. A commitment fee of .25% is charged on the unused portion of the borrowing base. On June 29, 2005, the Company entered into a Second Amendment to extend the expiration date of the Agreement to June 27, 2006. The Agreement contains covenants including certain financial reporting requirements. At December 31, 2005, the Company was in compliance with its financial reporting requirements and cash balance covenants.

The Company maintains allowances for doubtful accounts for estimated losses resulting from the inability of its customers to pay amounts due. The Company actively pursues collection of past due receivables as the circumstances warrant. Customers are contacted to determine the status of payment and senior accounting and operations management are included in these efforts as is deemed necessary. A specific reserve will be established for past due accounts over 60 days and over a specified amount, when it is probable that a loss has been incurred and the Company can reasonably estimate the amount of the loss. The Company does not record an allowance for government receivables and invoices backed by letters of credit as realizeability is reasonably assured. Bad debts are written off against the allowance when identified. There is no dollar threshold for account balance write-offs. While rare, a write-off is only recorded when all efforts to collect the receivable have been exhausted and only in consultation with the appropriate business line manager.

To date, there are no material commitments by the Company for capital expenditures. At December 31, 2005, the Company's accumulated deficit was \$1,605,000, compared to accumulated deficit of \$1,649,000 as of December 31, 2004.

The Company has incurred significant operating losses in 2005 and 2004. Loss from operations, before gain on sales of licenses and extinguishment of purchase commitment, were \$6.6 million and \$6.8 million in 2005 and 2004, respectively. These losses from operations have resulted in an operating cash loss (net income (loss) excluding gain on sales of licenses plus or minus non-cash adjustments) of approximately \$4.5 million in each of 2005 and 2004, respectively. The Company has funded these operating cash losses from cash receipts of \$6.7 million and \$3.0 million in 2005 and 2004, respectively, related to the sale of certain licenses to its medical products and solar technologies. As of December 31, 2005, the Company had cash and cash equivalents of \$3.6 million. While the Company believes it has inherent assets and technology that it could sell or license in the near term, there is no guarantee that the Company would be able to sell or license those assets on a timely basis and at appropriate values that would allow the Company to continue to fund its operating losses. The Company has developed several plans to mitigate cash losses, if required, including potential cost reduction efforts and outside financing. As a result, the Company believes it has sufficient resources to continue as a going concern for the foreseeable future.

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CONTRACTUAL OBLIGATIONS, COMMERCIAL COMMITMENTS AND OFF-BALANCE SHEET ARRANGEMENTS.

The following table summarizes the Company's gross contractual obligations at December 31, 2005 and the maturity periods and the effect that such obligations are expected to have on its liquidity and cash flows in future periods:

| Contractual Obligations | Payments Due by Period | | | | |
|----------------------------------|------------------------|---------------------|----------------|----------------|----------------------|
| | Total | Less than 1 Year | 2 - 3 Years | 4 - 5 Years | More Than 5 Years |
| PURCHASE OBLIGATIONS | \$ 410,000 | \$ 384,000 | \$ 26,000 | \$ -- | \$ -- |
| CAPITAL LEASES: | | | | | |
| Unrelated party capital lease | \$ 496,000 | \$ 496,000 | \$ -- | \$ -- | \$ -- |
| Related party capital lease | 2,468,000 | 870,000 | 1,598,000 | -- | -- |
| OPERATING LEASES: | | | | | |
| Unrelated party operating leases | \$ 283,000 | \$ 118,000 | \$ 136,000 | \$ 29,000 | \$ -- |
| Related party operating lease | 2,380,000 | 1,242,000 | 1,138,000 | -- | -- |

Purchase obligations include all open purchase orders outstanding regardless of whether they are cancelable or not.

Capital lease obligations outlined above include both the principal and interest components of these contractual obligations.

On October 8, 1999, the Company entered into an agreement with BP Solarex ("BPS") in which BPS agreed to purchase certain production equipment built by the Company, for use in the Company's Chicago factory ("Spire Solar Chicago") and in return the Company agreed to purchase solar cells of a minimum of two megawatts per year over a five-year term for a fixed fee from BPS (the "Purchase Commitment"). BPS had the right to reclaim the equipment if the Company failed to meet its obligations in the Purchase Commitment. The proceeds from the sale of the production equipment purchased by BPS were classified as an unearned purchase discount in the Company's consolidated balance sheets in prior periods. The Company had amortized this discount as a reduction to cost of sales as it purchased materials from BPS. In 2003 the Company and BPS retroactively amended the agreement to include all purchases of solar modules, solar systems, inverter systems and other system equipment purchased by the Company from BPS in the purchase commitment calculation. Amortization of the purchase discount amounted to approximately \$65,000 and \$160,000 for the years ended December 31, 2005 and 2004, respectively. The production equipment had been classified as a component of fixed assets. Depreciation amounted to approximately \$211,000 for the year ended December 31, 2005.

In addition, the agreement contained a put option for BPS to have the Company create a separate legal entity for Spire Solar Chicago and for BPS to convert the value of the equipment and additional costs, as defined, into equity of the new legal entity. The percentage ownership in the joint venture would be determined based on the cumulative investments by BPS and the Company. The amended agreement also allowed the Company to terminate the agreement on 30 days notice in consideration for a termination payment based on the aggregate amount of Spire purchases of BPS products and the fair market value of the production equipment purchased by BPS at the time of the termination election.

On August 16, 2005, the Company entered into a Settlement and Contract

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Termination Agreement (the "Termination Agreement") with BPS effective September 30, 2005. Under the terms of the Termination Agreement, the Company and BPS agreed to terminate the amended agreement including the Purchase Commitment. In exchange for release of the purchase commitment, the Company paid BPS \$275,000 and retained ownership of the production equipment. The unamortized unearned purchase discount as of the effective date was approximately \$1,205,000 and the net book value of the production equipment was approximately \$287,000. As result of this action, Spire reevaluated the recoverability of the long-lived assets associated with this segment as part of its third quarter review. Based on cash flow projections for the Solar System segment, the Company determined that the production equipment was impaired and should be written-off.

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The Company has recorded an approximate \$593,000 gain from these actions, which is reflected as a gain on extinguishment of purchase commitment in the accompanying consolidated statement of operations for the year ended December 31, 2005. The components of this gain are outlined below:

| | |
|---|--------------|
| Unearned purchase discount | \$ 1,205,000 |
| Net book value of production equipment | (287,000) |
| Payment to extinguish purchase commitment | (275,000) |
| Accrued relocation costs | (50,000) |
| | ----- |
| Gain on extinguishment of purchase commitment | \$ 593,000 |
| | ===== |

In October 2002, the Company sold an exclusive patent license for a hemodialysis split-tip catheter to Bard Access Systems, Inc. ("Bard"), a wholly owned subsidiary of C. R. Bard, Inc., in exchange for \$5,000,000 upon the execution of the agreement, with another \$5,000,000 due upon the earlier to occur of: (a) the date of the first commercial sale of a licensed product by Bard; or (b) no more than 18 months after signing. The agreement further provided for two additional contingent cash payments of \$3,000,000 each upon the completion of certain milestones by Bard in 2004 and 2005. Bard had the right to cancel the agreement at any time subsequent to the second payment. During the year ended December 31, 2002, the Company recorded the initial payment under the agreement, resulting in a gain of \$4,464,929, net of direct costs. Due to the potential length of time between the first and second payments and the cancellation provisions within the agreement, the Company did not record the potential remaining payments at that time. During June 2003, in accordance with the agreement, the Company received notification from Bard of the first commercial sale, collected the \$5,000,000 payment due and recorded a gain of \$4,989,150, net of direct costs. In June 2004, the Company received the first contingent milestone payment and recorded a gain of \$3,000,000. In June 2005, the Company received the second and final contingent milestone payment and recorded a gain of \$3,000,000. There were no direct costs associated with these payments. These gains have been recorded in the accompanying consolidated statements of operations for the years ended December 31, 2005 and 2004, respectively.

In conjunction with the sale, the Company received a sublicense, which permits the Company to continue to manufacture and market hemodialysis catheters for the treatment of chronic kidney disease. In addition, the Company granted Bard a right of first refusal should the Company seeks to sell the catheter business.

On May 26, 2005, the Company entered into a global consortium agreement (the "Consortium Agreement") with Nisshinbo Industries, Inc. ("Nisshinbo") for the development, manufacturing, and sales of solar photovoltaic module manufacturing equipment. Under the terms of the Consortium Agreement, Nisshinbo

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purchased a license to manufacture and sell the Company's module manufacturing equipment for an upfront fee plus additional royalties based on ongoing equipment sales over a ten-year period. In addition, the Company and Nisshinbo agreed, but are not obligated, to pursue joint research and development, product improvement activities and sales and marketing efforts. On June 27, 2005, the Company received JPY 400,000,000 (approximately \$3.7 million) from the sale of this permanent license. The Company has determined the fair value of the license and royalty based on an appraisal. As a result, a \$3,319,600 gain has been recognized as a gain on sale of license in the accompanying consolidated statement of operations for the year ended December 31, 2005. The balance of \$350,000 was determined to represent an advanced royalty payment and was recorded as an advance on contracts in progress. This amount is being accreted as royalty income over the ten year license period on a straight line basis. Approximately \$86,000 of royalty income was recognized during the year ended December 31, 2005.

As of June 30, 2005, JPY 400,000,000 was held in a Japanese yen account. The Company converted JPY 350,000,000 into \$3,139,295 on August 3, 2005 resulting in an approximate \$17,000 currency translation loss. The Company continues to maintain a Japanese yen account (approximately JPY 33,738,000 as of December 31, 2005.) As of December 31, 2005, approximately \$287,000 has been reflected in cash and cash equivalents in the accompanying consolidated balance sheet utilizing the closing yen/dollar exchange rate as of December 31, 2005. Total currency translation loss for the year ended December 31, 2005 of \$104,039 is reflected in other expense, net in the accompanying consolidated statement of operations.

Outstanding letters of credit totaled \$926,000 at December 31, 2005. The letters of credit principally secure performance obligations, and allow holders to draw funds up to the face amount of the letter of credit if the Company does not perform as contractually required. These letters of credit expire through 2007 and are 100% secured by cash.

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RECENT ACCOUNTING PRONOUNCEMENTS

In November 2004, the FASB issued FASB Statement No. 151, "Inventory Costs - an Amendment of ARB No. 43, Chapter 4" ("FAS 151"). FAS 151 amends ARB 43, Chapter 4, to clarify that abnormal amounts of idle facility expense, freight, handling costs, and wasted materials (spoilage) should be recognized as current-period charges. In addition, this Statement requires that allocation of fixed production overheads to the costs of conversion be based on the normal capacity of the production facilities. The provisions of this Statement are effective for inventory costs incurred during fiscal years beginning after June 15, 2005. The adoption of the provisions of FAS 151 is not expected to have a material impact on the Company's financial position or results of operations.

In December 2004, the FASB issued SFAS No. 123R, SHARE-BASED PAYMENT. SFAS No. 123R requires companies to expense the value of employee stock option and similar awards. SFAS No. 123R is effective as of the beginning of the first interim or annual reporting period that begins after December 15, 2005. As of the effective date, the Company will be required to expense all awards granted, modified, cancelled or repurchased as well as the portion of prior awards for which the requisite service has not been rendered, based on the grant-date fair value of those awards as calculated for pro forma disclosures under SFAS No. 123. SFAS No. 123R permits public companies to adopt its requirements using one of two methods: A "modified prospective" method in which compensation cost is recognized beginning with the effective date (a) based on the requirements of SFAS No. 123R for all share-based payments granted after the effective date and (b) based on the requirements of SFAS No. 123 for all awards granted to

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employees prior to the effective date of SFAS No. 123R that remain unvested on the effective date. A "modified retrospective" method includes the requirements of the modified prospective method described above, but also permits entities to restate based on the amounts previously recognized under SFAS No. 123 for purposes of pro forma disclosures either (a) all prior periods presented or (b) prior interim periods of the year of adoption. SFAS No. 123R also requires the benefits of tax deductions in excess of recognized compensation cost to be reported as a financing cash flow, rather than as an operating cash flow as required under current literature. This requirement will reduce net operating cash flows and increase net financing cash flows in periods after adoption. The Company estimates that the adoption of SFAS No. 123R's fair value method will result in an approximate \$285,000 expense in 2006 based on current assumptions and options currently outstanding.

In May 2005, the FASB issued FASB Statement No. 154, "Accounting Changes and Error Corrections, a replacement of APB Opinion No. 20, Accounting Changes and FASB Statement No. 3, Reporting Accounting Changes in Interim Financial Statements" ("FAS 154"). FAS 154 provides guidance on the accounting for and reporting of accounting changes and error corrections. It establishes, unless impracticable, retrospective application as the required method for reporting a change in accounting principle in the absence of explicit transition requirements specific to the newly adopted accounting principle. FAS 154 also provides guidance for determining whether retrospective application of a change in accounting principle is impracticable and for reporting a change when retrospective application is impracticable. The provisions of this Statement are effective for accounting changes and corrections of errors made in fiscal periods beginning after December 15, 2005. The adoption of the provisions of FAS 154 is not expected to have a material impact on the Company's financial position or results of operations.

IMPACT OF INFLATION AND CHANGING PRICES

Historically, the Company's business has not been materially impacted by inflation. Manufacturing equipment and solar systems are generally quoted, manufactured and shipped within a cycle of approximately nine months, allowing for orderly pricing adjustments to the cost of labor and purchased parts. The Company has not experienced any negative effects from the impact of inflation on long-term contracts. The Company's service business is not expected to be seriously affected by inflation because its procurement-production cycle typically ranges from two weeks to several months, and prices generally are not fixed for more than one year. Research and development contracts usually include cost escalation provisions.

FOREIGN CURRENCY FLUCTUATION

The Company sells only in U.S. dollars, generally against an irrevocable confirmed letter of credit through a major United States bank. Therefore the Company is not directly affected by foreign exchange fluctuations on its current orders. However, fluctuations in foreign exchange rates do have an effect on the Company's customers' access to U.S. dollars and on the pricing competition on certain pieces of equipment that the Company sells in selected markets. The Company received Japanese yen in exchange for the sale of a license to its solar technology. In addition, purchases made and royalties received under the Company's Consortium Agreement with its Japanese partner will be in Japanese yen. The Company does not believe that foreign exchange fluctuations will materially affect its operations.

RELATED PARTY TRANSACTIONS

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The Company subleased 77,000 square-feet in a building leased by Mykrolis Corporation, who in turn leased the building from SPI-Trust, a Trust of which Roger Little, Chairman of the Board, Chief Executive Officer and President of the Company, is the sole trustee and principal beneficiary. The 1985 sublease originally was for a period of ten years, was extended for a five-year period expiring on November 30, 2000 and was further extended for a five-year period expiring on November 30, 2005. The sublease agreement provided for minimum rental payments plus annual increases linked to the consumer price index. Rent expense under this sublease for the year ended December 31, 2005 and 2004 was \$1,093,000 and \$1,151,000, respectively. In connection with this sublease, the Company was invoiced and paid certain SPI-Trust related expenses, including building maintenance and insurance. The Company invoiced SPI-Trust on a monthly basis and SPI-Trust reimbursed the Company for all such costs.

On November 11, 2005, the Company entered into an Extension of Lease Agreement (the "Lease Extension") directly with SPI-Trust the term of which commenced on December 1, 2005. The Lease Extension is for a period of two years and maintains the rental payments at the now current rental rate over the two (2) year period. All other terms of the Lease Extension are substantially the same as were in effect under the former lease and sublease agreements. The Company assumed certain responsibilities of Mykrolis, the tenant under the former lease, as a result of the Lease Extension including payment of all building and real estate related expenses associated with the ongoing operations of the property. The Company will allocate a portion of these expenses to SPI-Trust based on pre-established formulas utilizing square footage and actual usage where applicable. These allocated expenses will be invoiced monthly and be paid utilizing a SPI-Trust escrow account of which the Company has sole withdrawal authority. SPI-Trust is required to maintain three (3) months of its anticipated operating costs within this escrow account. The Company believes that the terms of the Lease Extension are commercially reasonable. Rent expense under the Lease Extension for the year ended December 31, 2005 was approximately \$103,000. Approximately \$9,000 was due from SPI-Trust as of December 31, 2005 for building related costs.

In conjunction with the acquisition of Bandwidth by the Company, the Company released Bandwidth from a lease agreement that had existed between Bandwidth and the Company. In November 2001, Bandwidth, under its previous owner, abandoned the space being subleased from the Company in Bedford, Massachusetts, to move to a new building and wafer fabrication lab in Hudson, New Hampshire. At that time, there were 48 months left on the lease. Subsequent to the move to Hudson, New Hampshire, Bandwidth was unable to sublease the Bedford, Massachusetts space, and was paying the Company for the unused space. In conjunction with the acquisition of Bandwidth in May 2003, the Company released Bandwidth from the remaining lease payments. However, the Company continued to be obligated to Mykrolis Corporation for the entire amount of the remaining lease agreement. As a result, the present value of the remaining lease obligation associated with the unused space was recorded as an assumed liability of \$1,247,241 in the purchase accounting. This lease obligation terminated in November 2005. The difference between the actual rent payment and the discounted rent payment was accreted to the consolidated statements of operations as interest expense. Interest of 4.75% had been assumed on this obligation. For the year ended December 31, 2005, interest expense was approximately \$11,000.

Also in conjunction with the acquisition of Bandwidth by the Company, SPI-Trust, a Trust of which Roger G. Little, Chairman of the Board, Chief Executive Officer and President of the Company, is sole trustee and principal beneficiary, purchased from Stratos Lightwave, Inc. (Bandwidth's former owner) the building that Bandwidth occupies in Hudson, New Hampshire for \$3.7 million. Subsequently, the Company entered into a lease for the building (90,000 square feet) with SPI-Trust whereby the Company will pay \$4.1 million to the SPI-Trust over an initial five-year term expiring in 2008 with a Company option to extend for five years. In addition to the rent payments, the lease obligates the

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Company to keep on deposit with SPI-Trust the equivalent of three months rent (\$191,250 as of December 31, 2005.) The lease agreement does not provide for a transfer of ownership at any point. Interest costs were assumed at 7%. For the year ended December 31, 2005, interest expense was approximately \$179,000. This lease has been classified as a related party capital lease and a summary of payments (including interest) follows:

| Year | Rate Per Square Foot | Annual Rent | Monthly Rent | Security Deposit |
|-----------------------------|-------------------------|--------------------------------|--------------|---------------------|
| June 1, 2003 - May 31, 2004 | \$ 6.00 | \$ 540,000 | \$ 45,000 | \$ 135,000 |
| June 1, 2004 - May 31, 2005 | 7.50 | 675,000 | 56,250 | 168,750 |
| June 1, 2005 - May 31, 2006 | 8.50 | 765,000 | 63,750 | 191,250 |
| June 1, 2006 - May 31, 2007 | 10.50 | 945,000 | 78,750 | 236,250 |
| June 1, 2007 - May 31, 2008 | 13.50 | 1,215,000 | 101,250 | 303,750 |
| | | ----- \$ 4,140,000 ===== | | |

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At December 31, 2005, \$734,000 and \$1,514,000 are reflected as the current and long-term portions of capital lease obligation - related party, respectively, in the consolidated balance sheet.

CRITICAL ACCOUNTING POLICIES

The preparation of financial statements in accordance with accounting principles generally accepted in the United States requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Among the significant estimates affecting our consolidated financial statements are those relating to revenue recognition, reserves for doubtful accounts and sales returns and allowances, reserve for excess and obsolete inventory, impairment of long-lived assets, income taxes, and warranty reserves. We regularly evaluate our estimates and assumptions based upon historical experience and various other factors that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. To the extent actual results differ from those estimates, our future results of operations may be affected. We believe the following critical accounting policies affect our more significant judgments and estimates used in the preparation of our consolidated financial statements. Refer to Footnote 2 of our notes to consolidated financial statements for a description of our accounting policies.

REVENUE RECOGNITION

The Company derives its revenues from three primary sources: (1) commercial products including, but not limited to, solar energy manufacturing equipment, solar energy systems and hemodialysis catheters; (2) biomedical and semiconductor processing services; and (3) United States government funded research and development contracts.

We generally recognize product revenue upon shipment of products provided there are no uncertainties regarding customer acceptance, persuasive evidence of an arrangement exists, the sales price is fixed or determinable, and collectibility is reasonably assured. These criteria are generally met at the

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time of shipment when the risk of loss and title passes to the customer or distributor, unless a consignment arrangement exists. Revenue from consignment arrangements is recognized based on product usage indicating sales are complete.

The Company utilizes a distributor network to market and sell its hemodialysis catheters domestically. The Company generally recognizes revenue when the catheters are shipped to its distributors. Gross sales reflect reductions attributable to customer returns and various customer incentive programs including pricing discounts and rebates. Product returns are permitted in certain sales contracts and an allowance is recorded for returns based on the Company's history of actual returns. Certain customer incentive programs require management to estimate the cost of those programs. The allowance for these programs is determined through an analysis of programs offered, historical trends, expectations regarding customer and consumer participation, sales and payment trends, and experience with payment patterns associated with similar programs that had been previously offered. An analysis of the sales return and rebate activity for the years ended December 31, 2005 and 2004, is as follows:

| | Rebates ----- | Returns ----- | Total ----- |
|-----------------------------|------------------|------------------|----------------|
| Balance - December 31, 2003 | \$ -- | \$ -- | \$ -- |
| Provision | 210,666 | 111,933 | 322,599 |
| Utilization | (154,900) | (83,284) | (238,184) |
| | ----- | ----- | ----- |
| Balance - December 31, 2004 | 55,766 | 28,649 | 84,415 |
| Provision | 361,623 | 96,532 | 458,155 |
| Utilization | (325,789) | (106,081) | (431,870) |
| | ----- | ----- | ----- |
| Balance - December 31, 2005 | \$ 91,600 | \$ 19,100 | \$ 110,700 |
| | ===== | ===== | ===== |

- o Credits for rebates are recorded in the month of the actual sale.
- o Credits for returns are processed when the actual merchandise is received by Spire.
- o Substantially all rebates and returns are processed no later than three months after original shipment by Spire.

The reserve percentage has been approximately 13% to 15% of inventory held by distributors over the last two years. Spire performs various sensitivity analyses to determine the appropriate reserve percentage to use. To date, actual quarterly reserve utilization has approximated the amount provided. The total inventory held by distributors was approximately \$730,000 at December 31, 2005.

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If sufficient history to make reasonable and reliable estimates of returns or rebates does not exist, revenue associated with such practices is deferred until the return period lapses or a reasonable estimate can be made. This deferred revenue will be recognized as revenue when the distributor reports to us that it has either shipped or disposed of the units (indicating that the possibility of return is remote).

The Company's OEM capital equipment solar energy business builds complex customized machines to order for specific customers. Substantially all of these orders are sold on a FOB Bedford, Massachusetts (or EX-Works Factory) basis. It is the Company's policy to recognize revenues for this equipment as the product is shipped to the customer, as customer acceptance is obtained prior to shipment and the equipment is expected to operate the same in the customer's environment as it does in the Company's environment. When an arrangement with the customer includes future obligations or customer acceptance, revenue is recognized when

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those obligations are met or customer acceptance has been achieved. The Company's solar energy systems business installs solar energy systems on customer-owned properties on a contractual basis. Generally, revenue is recognized once the systems have been installed and the title is passed to the customer. For arrangements with multiple elements, the Company allocates fair value to each element in the contract and revenue is recognized upon delivery of each element. If the Company is not able to establish fair value of undelivered elements, all revenue is deferred.

The Company recognizes revenues and estimated profits on long-term government contracts on the accrual basis where the circumstances are such that total profit can be estimated with reasonable accuracy and ultimate realization is reasonably assured. The Company accrues revenue and profit utilizing the percentage of completion method using a cost-to-cost methodology. A percentage of the contract revenues and estimated profits is determined utilizing the ratio of costs incurred to date to total estimated cost to complete on a contract by contract basis. Profit estimates are revised periodically based upon changes and facts, and any losses on contracts are recognized immediately. Some of the contracts include provisions to withhold a portion of the contract value as retainage until such time as the United States government performs an audit of the cost incurred under the contract. The Company's policy is to take into revenue the full value of the contract, including any retainage, as it performs against the contract since the Company has not experienced any substantial losses as a result of audits performed by the United States government.

IMPAIRMENT OF LONG-LIVED ASSETS

Long-lived assets, including fixed assets and intangible assets, are continually monitored and are evaluated at least annually for impairment. The determination of recoverability is based on an estimate of undiscounted cash flows expected to result from the use of an asset and its eventual disposition. The estimate of cash flows is based upon, among other things, certain assumptions about expected future operating performance. Our estimates of undiscounted cash flows may differ from actual cash flows due to, among other things, technological changes, economic conditions, changes to our business model or changes in our operating performance. If the sum of the undiscounted cash flows (excluding interest) is less than the carrying value, we recognize an impairment loss, measured as the amount by which the carrying value exceeds the fair value of the asset.

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ITEM 7. FINANCIAL STATEMENTS

CONSOLIDATED FINANCIAL STATEMENTS

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders
of Spire Corporation:

We have audited the consolidated balance sheet of Spire Corporation and subsidiaries as of December 31, 2005 and the related consolidated statements of operations, stockholders' equity and comprehensive income/(loss), and cash flows for the years ended December 31, 2005 and 2004. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States of America.) Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. An audit includes 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

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opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Spire Corporation and subsidiaries as of December 31, 2005, and the results of their operations and their cash flows for the years ended December 31, 2005 and 2004, in conformity with accounting principles generally accepted in the United States of America.

/s/ VITALE, CATURANO & COMPANY, LTD.

Boston, Massachusetts
February 21, 2006

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SPIRE CORPORATION AND SUBSIDIARIES CONSOLIDATED BALANCE SHEET

| | DECEMBER 31, 2005 ----- |
|---|-------------------------------|
| ASSETS | |
| Current assets | |
| ----- | |
| Cash and cash equivalents | \$ 3,630,163 |
| Restricted cash - current portion | 804,545 |
| | ----- |
| | 4,434,708 |
| | ----- |
| Accounts receivable - trade, net | 3,696,411 |
| Inventories, net | 2,660,489 |
| Prepaid expenses and other current assets | 606,853 |
| | ----- |
| Total current assets | 11,398,461 |
| | ----- |

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| | |
|--|---------------|
| Property and equipment, net | 4,515,871 |
| <hr/> | |
| Intangible and other assets (less accumulated amortization of \$694,826 in 2005) | 670,525 |
| Available-for-sale investments, at quoted market value (cost of \$1,014,051) | 1,054,785 |
| Restricted cash - long-term | 121,000 |
| Deposit - related party | 191,250 |
| <hr/> | |
| Total other assets | 2,037,560 |
| <hr/> | |
| Total assets | \$ 17,951,892 |
| <hr/> <hr/> | |

LIABILITIES AND STOCKHOLDERS' EQUITY

Current liabilities

| | |
|---|------------|
| <hr/> | |
| Current portion of capital lease obligation | \$ 446,684 |
| Current portion of capital lease obligation - related party | 734,376 |
| Accounts payable | 1,217,220 |
| Accrued liabilities | 1,971,908 |
| Accrued lease obligation - related party | -- |
| Advances on contracts in progress | 1,758,479 |
| <hr/> | |
| Total current liabilities | 6,128,667 |
| <hr/> | |

| | |
|---|-----------|
| Long-term portion of capital lease obligation | -- |
| Long-term portion of capital lease obligation - related party | 1,513,606 |
| Deferred compensation | 1,054,785 |
| Unearned purchase discount | -- |
| <hr/> | |
| Total long-term liabilities | 2,568,391 |
| <hr/> | |
| Total liabilities | 8,697,058 |
| <hr/> | |

Commitments and Contingencies

Stockholders' equity

| | |
|--|---------------|
| <hr/> | |
| Common stock, \$0.01 par value; shares authorized 20,000,000; 7,222,987 shares issued and outstanding | 72,230 |
| Additional paid-in capital | 10,763,286 |
| Accumulated deficit | (1,605,168) |
| Accumulated other comprehensive income, net | 24,486 |
| <hr/> | |
| Total stockholders' equity | 9,254,834 |
| <hr/> | |
| Total liabilities and stockholders' equity | \$ 17,951,892 |
| <hr/> <hr/> | |

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

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CONSOLIDATED STATEMENTS OF OPERATIONS

| | YEARS ENDED DECEMBER 31, | |
|--|--------------------------|----------------|
| | 2005 | 2004 |
| Net sales and revenues | | |
| Contract research, service and license revenues | \$ 11,151,101 | \$ 10,273,191 |
| Sales of goods | 11,270,509 | 7,004,845 |
| Total net sales and revenues | 22,421,610 | 17,278,036 |
| Costs and expenses | | |
| Cost of contract research, services and licenses | 8,778,917 | 8,263,816 |
| Cost of goods sold | 10,322,157 | 6,355,439 |
| Selling, general and administrative expenses | 8,539,377 | 8,096,773 |
| Internal research and development expenses | 1,346,109 | 1,405,981 |
| Total costs and expenses | 28,986,560 | 24,122,009 |
| Gain on extinguishment of purchase commitment | 593,313 | -- |
| Gain on sales of licenses | 6,319,600 | 3,000,000 |
| Earnings (loss) from operations | 347,963 | (3,843,973) |
| Other expense, net | (303,741) | (275,589) |
| Earnings (loss) before income taxes | 44,222 | (4,119,562) |
| Income tax benefit (expense) | -- | -- |
| Net income (loss) | \$ 44,222 | \$ (4,119,562) |
| Earnings (loss) per share of common stock - basic | \$ 0.01 | \$ (0.60) |
| Earnings (loss) per share of common stock - diluted | \$ 0.01 | \$ (0.60) |
| Weighted average number of common and common equivalent shares outstanding - basic | 6,975,347 | 6,809,462 |
| Weighted average number of common and common equivalent shares outstanding - diluted | 7,237,129 | 6,809,462 |

The accompanying notes are an integral part

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of these consolidated financial statements.

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SPIRE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY AND COMPREHENSIVE INCOME/(LOSS)

YEARS ENDED DECEMBER 31, 2005 AND 2004

| | COMMON STOCK | | ADDITIONAL PAID-IN CAPITAL | ACCUMULATED OTHER COMPREHENSIVE INCOME | RETAINED EARNINGS (ACCUMULATED DEFICIT) |
|---|--------------|-----------|----------------------------------|---|--|
| | SHARES | AMOUNT | | | |
| Balance, December 31, 2003 | 6,765,660 | \$ 67,657 | \$ 9,258,536 | \$ -- | \$ 2,470 |
| Exercise of stock options | 82,881 | 828 | 189,350 | -- | |
| Net unrealized gains on available for sale marketable securities, net of tax | -- | -- | -- | 24,556 | |
| Net loss | -- | -- | -- | -- | (4,119) |
| Balance, December 31, 2004 | 6,848,541 | 68,485 | 9,447,886 | 24,556 | (1,649) |
| Exercise of stock options | 374,446 | 3,745 | 1,315,400 | -- | |
| Net unrealized loss on available for sale marketable securities, net of tax | -- | -- | -- | (70) | |
| Net income | -- | -- | -- | -- | 44 |
| Balance, December 31, 2005 | 7,222,987 | \$ 72,230 | \$ 10,763,286 | \$ 24,486 | \$ (1,605) |

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SPIRE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

| | YEARS ENDED DECEMBER 31 | |
|--|-------------------------|-------------|
| | 2005 | 2004 |
| Cash flows from operating activities: | | |
| Net income (loss) | \$ 44,222 | \$ (4,119) |
| Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities: | | |
| Depreciation and amortization | 2,450,961 | 2,579,000 |
| Gain on extinguishment of purchase commitment | (593,313) | |
| Loss on disposal of license and fixed assets | -- | 130,000 |
| Deferred compensation | (70) | 24,000 |
| Unearned purchase discounts | (64,754) | (159,000) |
| Changes in assets and liabilities: | | |
| Restricted cash | (194,656) | 53,000 |
| Accounts receivable, net | 531,467 | 12,000 |
| Inventories | 63,949 | (1,293,000) |
| Prepaid expenses and other current assets | 97,656 | 118,000 |
| Refundable income taxes | (150,095) | 475,000 |
| Accounts payable, accrued liabilities and other liabilities | (769,573) | (51,000) |
| Other assets | -- | (217,000) |
| Deposit - related party | (22,500) | (168,000) |
| Advances on contracts in progress | (840,267) | 1,418,000 |
| Net cash provided by (used in) operating activities | 553,027 | (1,196,000) |
| Cash flows from investing activities: | | |
| Additions to property and equipment | (428,275) | (407,000) |
| Payment to extinguish purchase commitment | (275,000) | |
| Restricted cash - long term | 96,800 | |
| Increase in intangible and other assets | (22,355) | (467,000) |
| Net cash used in investing activities | (628,830) | (874,000) |
| Cash flows from financing activities: | | |
| Principal payments on capital lease obligations - related parties | (548,365) | (406,000) |
| Principal payments on capital lease obligations | (401,681) | (374,000) |
| Proceeds from exercise of stock options | 1,319,145 | 190,000 |
| Net cash provided by (used in) financing activities | 369,099 | (590,000) |

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| | | |
|--|--------------|----------|
| | ----- | ----- |
| Net increase (decrease) in cash and cash equivalents | 293,296 | (2,662) |
| Cash and cash equivalents, beginning of year | 3,336,867 | 5,999 |
| Cash and cash equivalents, end of year | \$ 3,630,163 | \$ 3,336 |
| | ===== | ===== |
| Supplemental disclosures of cash flow information: | | |
| ----- | | |
| Cash paid (received) during the year for: | | |
| Interest | \$ 9,265 | \$ 61 |
| | ===== | ===== |
| Interest - related party | \$ 190,436 | \$ 266 |
| | ===== | ===== |
| Income taxes paid (received) | \$ 150,095 | \$ (559) |
| | ===== | ===== |

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

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SPIRE CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

DECEMBER 31, 2005 AND 2004

1. DESCRIPTION OF THE BUSINESS

Spire Corporation (the "Company") develops, manufactures and markets highly-engineered products and services in four principal business areas: solar equipment, solar systems, biomedical and optoelectronics bringing to bear expertise in materials technologies across all four business areas.

In the solar equipment area, the Company develops, manufactures and markets specialized equipment for the production of terrestrial photovoltaic modules from solar cells. The Company's equipment has been installed in approximately 170 factories in 43 countries.

In the solar systems area, the Company provides custom and building integrated photovoltaic modules, stand alone emergency power backup and electric power grid-connected distributed power generation systems employing photovoltaic technology developed by the Company.

In the biomedical area, the Company provides value-added surface treatments to manufacturers of orthopedic and other medical devices that enhance the durability, antimicrobial characteristics or other material characteristics of their products; develops and markets hemodialysis catheters and related devices for the treatment of chronic kidney disease and performs sponsored research programs into practical applications of advanced biomedical and biophotonic technologies.

In the optoelectronics area, the Company provides compound semiconductor foundry services on a merchant basis to customers involved in biomedical/biophotonic instruments, telecommunications and defense applications. Services include compound semiconductor wafer growth, other thin film processes and related device processing and fabrication services. The Company also

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provides materials testing services and performs services in support of sponsored research into practical applications of optoelectronic technologies.

Operating results will depend upon product mix, as well as the timing of shipments of higher priced products from the Company's solar equipment line and delivery of solar systems. Export sales, which amounted to 33% of net sales and revenues for 2005, continue to constitute a significant portion of the Company's net sales and revenues.

The Company has incurred significant operating losses in 2005 and 2004. Loss from operations, before gain on sales of licenses and extinguishment of purchase commitment, were \$6.6 million and \$6.8 million in 2005 and 2004, respectively. These losses from operations have resulted in an operating cash loss (net income (loss) excluding gain on sales of licenses plus or minus non-cash adjustments) of approximately \$4.5 million in each of 2005 and 2004, respectively. The Company has funded these operating cash losses from cash receipts of \$6.7 million and \$3.0 million in 2005 and 2004, respectively, related to the sale of certain licenses to its medical products and solar technologies. As of December 31, 2005, the Company had cash and cash equivalents of \$3.6 million. While the Company believes it has inherent assets and technology that it could sell or license in the near term, there is no guarantee that the Company would be able to sell or license those assets on a timely basis and at appropriate values that would allow the Company to continue to fund its operating losses. The Company has developed several plans to mitigate cash losses, if required, including potential cost reduction efforts and outside financing. As a result, the Company believes it has sufficient resources to continue as a going concern at least through December 31, 2006.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

(A) PRINCIPLES OF CONSOLIDATION

The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries. All significant intercompany balances and transactions have been eliminated in consolidation.

(B) REVENUE RECOGNITION

The Company derives its revenues from three primary sources: (1) commercial products including, but not limited to, solar energy manufacturing equipment, solar energy systems and hemodialysis catheters; (2) biomedical and semiconductor processing services; and (3) United States government funded research and development contracts.

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SPIRE CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS -- (CONTINUED)

DECEMBER 31, 2005 AND 2004

We generally recognize product revenue upon shipment of products provided there are no uncertainties regarding customer acceptance, persuasive evidence of an arrangement exists, the sales price is fixed or determinable, and collectibility is reasonably assured. These criteria are generally met at the time of shipment when the risk of loss and title passes to the customer or distributor, unless a consignment arrangement exists. Revenue from consignment arrangements is recognized based on product usage indicating sales are complete.

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The Company utilizes a distributor network to market and sell its hemodialysis catheters domestically. The Company generally recognizes revenue when the catheters are shipped to its distributors. Gross sales reflect reductions attributable to customer returns and various customer incentive programs including pricing discounts and rebates. Product returns are permitted in certain sales contracts and an allowance is recorded for returns based on the Company's history of actual returns. Certain customer incentive programs require management to estimate the cost of those programs. The allowance for these programs is determined through an analysis of programs offered, historical trends, expectations regarding customer and consumer participation, sales and payment trends, and experience with payment patterns associated with similar programs that had been previously offered. An analysis of the sales return and rebate activity for the years ended December 31, 2005 and 2004, respectively, is as follows:

| | Rebates | Returns | Total |
|-----------------------------|-----------|-----------|------------|
| | ----- | ----- | ----- |
| Balance - December 31, 2003 | \$ -- | \$ -- | \$ -- |
| Provision | 210,666 | 111,933 | 322,599 |
| Utilization | (154,900) | (83,284) | (238,184) |
| | ----- | ----- | ----- |
| Balance - December 31, 2004 | 55,766 | 28,649 | 84,415 |
| Provision | 361,623 | 96,532 | 458,155 |
| Utilization | (325,789) | (106,081) | (431,870) |
| | ----- | ----- | ----- |
| Balance - December 31, 2005 | \$ 91,600 | \$ 19,100 | \$ 110,700 |
| | ===== | ===== | ===== |

- o Credits for rebates are recorded in the month of the actual sale.
- o Credits for returns are processed when the actual merchandise is received by Spire.
- o Substantially all rebates and returns are processed no later than three months after original shipment by Spire.

The reserve percentage has been approximately 13% to 15% of inventory held by distributors over the last two years. Spire performs various sensitivity analyses to determine the appropriate reserve percentage to use. To date, actual quarterly reserve utilization has approximated the amount provided. The total inventory held by distributors was approximately \$730,000 at December 31, 2005.

If sufficient history to make reasonable and reliable estimates of returns or rebates does not exist, revenue associated with such practices is deferred until the return period lapses or a reasonable estimate can be made. This deferred revenue will be recognized as revenue when the distributor reports to us that it has either shipped or disposed of the units (indicating that the possibility of return is remote).

The Company's OEM capital equipment solar energy business builds complex customized machines to order for specific customers. Substantially all of these orders are sold on a FOB Bedford, Massachusetts (or EX-Works Factory) basis. It is the Company's policy to recognize revenues for this equipment as the product is shipped to the customer, as customer acceptance is obtained prior to shipment and the equipment is expected to operate the same in the customer's environment as it does in the Company's environment. When an arrangement with the customer includes future obligations or customer acceptance, revenue is recognized when those obligations are met or customer acceptance has been achieved. The Company's solar energy systems business installs solar energy systems on customer-owned properties on a contractual basis. Generally, revenue is recognized once the systems have been installed and the title is passed to the customer. For arrangements with multiple elements, the Company allocates fair value to each element in the contract and revenue is recognized upon delivery of each element. If the Company is not able to establish fair value of undelivered

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elements, all revenue is deferred.

The Company recognizes revenues and estimated profits on long-term government contracts on the accrual basis where the circumstances are such that total profit can be estimated with reasonable accuracy and ultimate realization is

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SPIRE CORPORATION AND SUBSIDIARIES NOTES TO CONSOLIDATED FINANCIAL STATEMENTS -- (CONTINUED)

DECEMBER 31, 2005 AND 2004

reasonably assured. The Company accrues revenue and profit utilizing the percentage of completion method using a cost-to-cost methodology. A percentage of the contract revenues and estimated profits is determined utilizing the ratio of costs incurred to date to total estimated cost to complete on a contract by contract basis. Profit estimates are revised periodically based upon changes and facts, and any losses on contracts are recognized immediately. Some of the contracts include provisions to withhold a portion of the contract value as retainage until such time as the United States government performs an audit of the cost incurred under the contract. The Company's policy is to take into revenue the full value of the contract, including any retainage, as it performs against the contract since the Company has not experienced any substantial losses as a result of audits performed by the United States government.

(C) CASH AND CASH EQUIVALENTS

Cash and cash equivalents include cash, time deposits and all highly liquid debt instruments with an original maturities of three months or less. These investments are carried at cost, which approximates market value.

(D) AVAILABLE-FOR-SALE INVESTMENTS

Available-for-sale securities consist of the following assets held as part of Spire Corporation Non-Qualified Deferred Compensation Plan:

| | December 31, 2005 |
|-----------------------------|----------------------|
| Equity investments | \$ 778,314 |
| Government bonds | 159,613 |
| Cash and money market funds | 116,858 |
| | ----- |
| | \$ 1,054,785 |
| | ===== |

These investments have been classified as long-term available-for-sale and are reported at fair value, with unrealized gains and losses included in accumulated other comprehensive income, net of related tax effect. As of December 31, 2005, the unrealized gain on these marketable securities was approximately \$41,000.

(E) INVENTORIES

Inventories are stated at the lower of cost or market, cost being determined on a first-in, first-out (FIFO) basis. Judgments and estimates are used in determining the likelihood that goods on hands can be sold to customers. Historical inventory usage and current revenue trends are considered in estimating both excess and obsolete inventory. If actual product demand and

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market conditions are less favorable than those projected by management, additional inventory write-downs may be required.

(F) PROPERTY AND EQUIPMENT

Property and equipment is stated at cost. Depreciation and amortization are provided using the straight-line method over the estimated useful lives of the respective assets, as follows:

| | |
|--|---|
| Building and equipment under capital lease | Lesser of 5 years or remaining life of lease term |
| Machinery and equipment | 5 and 7 years |
| Furniture and fixtures | 5 years |
| Leasehold improvements | Lesser of 10 years or remaining life of facility lease term |

Maintenance and repairs are charged to expense as incurred. Major renewals and betterments are added to property and equipment accounts at cost.

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SPIRE CORPORATION AND SUBSIDIARIES NOTES TO CONSOLIDATED FINANCIAL STATEMENTS -- (CONTINUED)

DECEMBER 31, 2005 AND 2004

(G) INTANGIBLE AND OTHER ASSETS

Patents amounted to \$535,498, net of accumulated amortization of \$600,897, at December 31, 2005. Licenses amounted to \$131,071, net of accumulated amortization of \$93,929, at December 31, 2005. Patent cost is primarily composed of cost associated with securing and registering patents that the Company has been awarded or that have been submitted to, and the Company believes will be approved by, the government. License cost is composed of the cost to acquire rights to the underlying technology or know-how. These costs are capitalized and amortized over their useful lives or terms, ordinarily five years, using the straight-line method. There are no expected residual values related to these patents. For disclosure purposes, the table below includes future amortization expense for patents and licenses owned by the Company as well as \$460,739 of estimated amortization expense related to patents that remain pending. Estimated amortization expense for the periods ending December 31, is as follows:

| Year | Amortization Expense |
|-------|----------------------|
| ----- | ----- |
| 2006 | \$172,638 |
| 2007 | 165,486 |
| 2008 | 138,331 |
| 2009 | 97,661 |
| 2010 | 92,453 |
| | ----- |
| | \$666,569 |
| | ===== |

Also included in other assets are \$3,956 of refundable deposits made by the Company.

(H) LONG-LIVED ASSETS

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The Company accounts for long-lived assets in accordance with the provisions of SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets". SFAS No. 144 requires that long-lived assets and certain identifiable intangibles be reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. The Company measures recoverability of assets to be held and used by a comparison of the carrying amount of an asset to future net cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceed the fair value of the assets. The Company reports assets to be disposed of at the lower of the carrying amount or fair value less costs to sell.

(I) INCOME TAXES

In accordance with SFAS No. 109, "Accounting for Income Taxes" ("SFAS 109"), the Company recognizes deferred income taxes based on the expected future tax consequences of differences between the financial statement basis and the tax basis of assets and liabilities, calculated using enacted tax rates in effect for the year in which the differences are expected to be reflected in the tax return. Valuation allowances are provided if, based on the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized.

(J) WARRANTY

The Company provides warranties on certain of its products and services. The Company's warranty programs are described below:

Spire Solar Equipment warrants solar energy module manufacturing equipment sold for a total of 360 days, the first 90 days of which include the replacement of defective component parts and the labor to correct the defect and the next 270 days of which include only the cost of defective component parts.

Spire Solar Systems warrants photovoltaic electric power systems sold against defective components for 360 days to include the replacement of defective component parts and the labor to correct the defect. Spire Solar Systems also warrants that its photovoltaic electric power systems will achieve a minimum of 80% of rated electrical power output for 20 years.

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SPIRE CORPORATION AND SUBSIDIARIES NOTES TO CONSOLIDATED FINANCIAL STATEMENTS -- (CONTINUED)

DECEMBER 31, 2005 AND 2004

Spire Biomedical warrants that any of its catheter products found to be defective will be replaced. No warranty is made that the failure of the product will not occur, and Spire disclaims any responsibility for any medical complications. Spire Biomedical warrants that its services only will meet the agreed upon specifications.

Bandwidth Semiconductor, LLC ("Bandwidth") warrants that its products will meet the agreed upon specifications.

The Company provides for the estimated cost of product warranties, determined primarily from historical information, at the time product revenue is recognized. Should actual product failure warranties differ from the Company's estimates, revisions to the estimated warranty liability would be required. The

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changes in the product warranties for the year ended December 31, 2005, are as follows:

| | |
|------------------------------|-----------|
| Balance at December 31, 2004 | \$ 50,000 |
| Provision charged to income | 29,650 |
| Usage | (29,650) |
| | ----- |
| Balance at December 31, 2005 | \$ 50,000 |
| | ===== |

(K) INTERNAL RESEARCH AND DEVELOPMENT COSTS

Internal research and development costs are charged to operations as incurred. During the years ended December 31, 2005 and 2004, Company funded research and development costs were approximately \$1,346,000 and \$1,406,000, respectively. Customer funded research and development efforts are recognized as cost of contract research, services and licenses in the accompanying consolidated statement of operations.

(L) EARNINGS (LOSS) PER SHARE

Basic earnings (loss) per share is computed by dividing income available to common stockholders by the weighted average number of common shares outstanding during the period. Diluted earnings (loss) per share gives effect to all potential dilutive common shares outstanding during the period. The computation of diluted earnings (loss) per share does not assume conversion, exercise or contingent exercise of securities that would have an anti-dilutive effect on earnings (loss) per share. The Company did not pay any dividends in 2005 and 2004.

(M) COMPREHENSIVE INCOME (LOSS)

Comprehensive income (loss) is comprised of net income (loss) and other comprehensive income. Other comprehensive income includes certain changes in equity that are excluded from net income (loss). At December 31, 2005, accumulated other comprehensive income was comprised of unrealized gain of available-for-sale investments of approximately \$25,000, net of tax.

(N) STOCK-BASED COMPENSATION

The Company has adopted the disclosure provisions of SFAS No. 148, "Accounting for Stock-Based Compensation-Transition and Disclosure" which is an amendment of SFAS No. 123 "Accounting for Stock-Based Compensation", and continues to apply Accounting Principles Board Opinion No. 25 and related interpretations in accounting for its stock plans. If the Company had elected to recognize compensation cost for all of the plans based upon the fair value at the grant dates for awards under those plans, consistent with the method prescribed by SFAS 123, net income (loss) and earnings (loss) per share would have been changed to the pro forma amounts indicated below.

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| | 2005 | 2004 |
|--|--------------|----------------|
| | ----- | ----- |
| Net earnings (loss), as reported | \$ 44,222 | \$ (4,119,562) |
| Deduct: Total stock-based employee compensation expense determined under fair value based method for all awards | (322,434) | (291,711) |
| | ----- | ----- |
| Pro forma net loss | \$ (278,212) | \$ (4,411,273) |
| | ===== | ===== |
| Earnings (loss) per share: | | |
| Basic - as reported | \$ 0.01 | \$ (0.60) |
| | ===== | ===== |
| Basic - pro forma | \$ (0.04) | \$ (0.65) |
| | ===== | ===== |
| Diluted - as reported | \$ 0.01 | \$ (0.60) |
| | ===== | ===== |
| Diluted - pro forma | \$ (0.04) | \$ (0.65) |
| | ===== | ===== |

The per-share weighted-average fair value of stock options granted in 2005 and 2004 was \$3.58 and \$3.56, respectively, on the date of grant using the Black-Scholes option-pricing model with the following weighted-average assumptions:

| Year | Expected Dividend Yield | Risk-Free Interest Rate | Expected Option Life | Expected Volatility Factor |
|-------|----------------------------|----------------------------|-------------------------|-------------------------------|
| ----- | ----- | ----- | ----- | ----- |
| 2005 | -- | 3.97% | 7.5 years | 66.6% |
| 2004 | -- | 4.23% | 5.0 years | 78.2% |

(O) TREASURY SHARES

There were no treasury shares as of December 31, 2005.

(P) USE OF ESTIMATES

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Significant estimates include revenue recognition, valuation of income tax assets and intangible assets. Actual results could differ from those estimates.

(Q) FINANCIAL INSTRUMENTS

Financial instruments of the Company consist of cash and cash equivalents, accounts receivable, available for sale marketable securities, accounts payable and capital leases. The carrying amounts of these financial instruments approximate their fair value.

(R) SHIPPING AND HANDLING COSTS

Shipping and handling costs are included in cost of goods sold.

(S) RECLASSIFICATIONS

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Certain prior year amounts have been reclassified to conform with current presentation.

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SPIRE CORPORATION AND SUBSIDIARIES NOTES TO CONSOLIDATED FINANCIAL STATEMENTS -- (CONTINUED)

DECEMBER 31, 2005 AND 2004

(T) NEW ACCOUNTING STANDARDS

In November 2004, the FASB issued FASB Statement No. 151, "Inventory Costs - an Amendment of ARB No. 43, Chapter 4" ("FAS 151"). FAS 151 amends ARB 43, Chapter 4, to clarify that abnormal amounts of idle facility expense, freight, handling costs, and wasted materials (spoilage) should be recognized as current-period charges. In addition, this Statement requires that allocation of fixed production overheads to the costs of conversion be based on the normal capacity of the production facilities. The provisions of this Statement are effective for inventory costs incurred during fiscal years beginning after June 15, 2005. The adoption of the provisions of FAS 151 is not expected to have a material impact on the Company's financial position or results of operations.

In December 2004, the FASB issued SFAS No. 123R, SHARE-BASED PAYMENT. SFAS No. 123R requires companies to expense the value of employee stock option and similar awards. SFAS No. 123R is effective as of the beginning of the first interim or annual reporting period that begins after December 15, 2005. As of the effective date, the Company will be required to expense all awards granted, modified, cancelled or repurchased as well as the portion of prior awards for which the requisite service has not been rendered, based on the grant-date fair value of those awards as calculated for pro forma disclosures under SFAS No. 123. SFAS No. 123R permits public companies to adopt its requirements using one of two methods: A "modified prospective" method in which compensation cost is recognized beginning with the effective date (a) based on the requirements of SFAS No. 123R for all share-based payments granted after the effective date and (b) based on the requirements of SFAS No. 123 for all awards granted to employees prior to the effective date of SFAS No. 123R that remain unvested on the effective date. A "modified retrospective" method includes the requirements of the modified prospective method described above, but also permits entities to restate based on the amounts previously recognized under SFAS No. 123 for purposes of pro forma disclosures either (a) all prior periods presented or (b) prior interim periods of the year of adoption. SFAS No. 123R also requires the benefits of tax deductions in excess of recognized compensation cost to be reported as a financing cash flow, rather than as an operating cash flow as required under current literature. This requirement will reduce net operating cash flows and increase net financing cash flows in periods after adoption. The Company estimates that the adoption of SFAS No. 123R's fair value method will result in an approximate \$285,000 expense in 2006 based on current assumptions and options outstanding as of December 31, 2005.

In May 2005, the FASB issued FASB Statement No. 154, "Accounting Changes and Error Corrections, a replacement of APB Opinion No. 20, Accounting Changes and FASB Statement No. 3, Reporting Accounting Changes in Interim Financial Statements" ("FAS 154"). FAS 154 provides guidance on the accounting for and reporting of accounting changes and error corrections. It establishes, unless impracticable, retrospective application as the required method for reporting a change in accounting principle in the absence of explicit transition requirements specific to the newly adopted accounting principle. FAS 154 also provides guidance for determining whether retrospective application of a change in accounting principle is impracticable and for reporting a change when

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retrospective application is impracticable. The provisions of this Statement are effective for accounting changes and corrections of errors made in fiscal periods beginning after December 15, 2005. The adoption of the provisions of FAS 154 is not expected to have a material impact on the Company's financial position or results of operations.

3. ACCOUNTS RECEIVABLE / ADVANCES ON CONTRACTS IN PROGRESS

Net accounts receivable, trade consists of the following:

| | December 31, 2005 |
|--|----------------------|
| | ----- |
| Amounts billed | \$ 3,394,736 |
| Retainage | 34,869 |
| Accrued revenue | 453,740 |
| | ----- |
| | 3,883,345 |
| Less: Allowance for sales returns and doubtful accounts | (186,934) |
| | ----- |
| Net accounts receivable | \$ 3,696,411 |
| | ===== |
| Advances on contracts in progress | \$ 1,758,479 |
| | ===== |

Accrued revenue represents revenues recognized on contracts for which billings have not been presented to customers as of the balance sheet date. These amounts are billed and generally collected within one year.

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SPIRE CORPORATION AND SUBSIDIARIES NOTES TO CONSOLIDATED FINANCIAL STATEMENTS -- (CONTINUED)

DECEMBER 31, 2005 AND 2004

Retainage represents revenues on certain United States government sponsored research and development contracts. These amounts, which usually represent 15% of the Company's research fee on each applicable contract, are not collectible until a final cost review has been performed by government auditors. Included in retainage are amounts expected to be collected after one year, which totaled approximately \$35,000 at December 31, 2005. All other accounts receivable are expected to be collected within one year.

All contracts with United States government agencies have been audited by the government through December 2003. The Company has not incurred significant losses as a result of these incurred cost audits.

The Company maintains allowances for doubtful accounts for estimated losses resulting from the inability of its customers to pay amounts due. The Company actively pursues collection of past due receivables as the circumstances warrant. Customers are contacted to determine the status of payment and senior accounting and operations management are included in these efforts as is deemed necessary. A specific reserve will be established for past due accounts over 60 days and over a specified amount, when it is probable that a loss has been incurred and the Company can reasonably estimate the amount of the loss. The Company does not record an allowance for government receivables and invoices

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backed by letters of credit as realizeability is reasonably assured. Bad debts are written off against the allowance when identified. There is no dollar threshold for account balance write-offs. While rare, a write-off is only recorded when all efforts to collect the receivable have been exhausted and only in consultation with the appropriate business line manager.

In addition, the Company maintains an allowance for potential future product returns and rebates related to current period revenues. The Company analyzes the rate of historical returns when evaluating the adequacy of the allowance for sales returns and allowances. Returns and rebates are charged against the allowance when incurred.

Advances on contracts in progress represent contracts for which billings have been presented to the customer but revenue has not been recognized.

4. INVENTORIES

Inventories consist of the following:

| | December 31, 2005 |
|-----------------|----------------------|
| | ----- |
| Raw materials | \$ 1,302,117 |
| Work in process | 1,057,595 |
| Finished goods | 300,777 |
| | ----- |
| | \$ 2,660,489 |
| | ===== |

5. PROPERTY AND EQUIPMENT

Property and equipment consists of the following:

| | December 31, 2005 |
|---|----------------------|
| | ----- |
| Building under capital lease | \$ 3,390,397 |
| Equipment under capital lease | 880,927 |
| Machinery and equipment | 13,055,807 |
| Furniture fixtures and computer equipment | 3,677,279 |
| Leasehold improvements | 1,993,738 |
| Construction in progress | 7,390 |
| | ----- |
| | 23,005,538 |
| Accumulated depreciation | (18,489,667) |
| | ----- |
| | \$ 4,515,871 |
| | ===== |

Depreciation expense relating to property and equipment was approximately \$2,366,000 and \$2,457,000 for the years ended December 31, 2005 and 2004, respectively.

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6. ACCRUED LIABILITIES

Accrued liabilities include the following:

| | December 31, 2005 |
|-----------------------------------|----------------------|
| Accrued payroll and payroll taxes | \$ 620,454 |
| Accrued legal and audit fees | 90,840 |
| Accrued other | 1,260,614 |
| | ----- |
| | \$ 1,971,908 |
| | ===== |

7. NOTES PAYABLE AND CREDIT ARRANGEMENTS

The Company has a \$2,000,000 Loan Agreement (the "Agreement") with Citizens Bank of Massachusetts (the "Bank"). The Agreement provides Standby Letter of Credit Guarantees for foreign and domestic customers, which are 100% secured with cash. At December 31, 2005, the Company had \$926,000 of restricted cash associated with outstanding Letters of Credit. Standby Letters of Credit under this Agreement bear interest at 1%. The Agreement also provides the Company with the ability to convert to a \$2,000,000 revolving line of credit, based upon eligible accounts receivable and certain conversion covenants. Loans under this revolving line of credit bear interest at the Bank's prime rate, as determined, plus 1/2% (7.75% at December 31, 2005.) At December 31, 2005, the Company had not exercised its conversion option and no amounts were outstanding under the revolving line of credit. A commitment fee of .25% is charged on the unused portion of the borrowing base. On June 29, 2005, the Company entered into a Second Amendment to extend the expiration date of the Agreement to June 27, 2006. The Agreement contains covenants including certain financial reporting requirements. At December 31, 2005, the Company was in compliance with its financial reporting requirements and cash balance covenants.

8. STOCK COMPENSATION PLANS

The Company has one employee stock option plan: the 1996 Equity Incentive Plan. This plan was approved by stockholders and provides that the Board of Directors may grant options to purchase the Company's common stock to key employees and directors of the Company. Incentive and non-qualified options must be granted at least at the fair market value of the common stock or, in the case of certain optionees, at 110% of such fair market value at the time of grant. The options may be exercised, subject to certain vesting requirements, for periods up to ten years from the date of issue.

Through December 31, 2005, the Company has outstanding under its 1996 Equity Incentive Plan, non-qualified stock options held by the unaffiliated directors of the Company for the purchase of common stock at an average price of \$5.91 per share. The options may be exercised, subject to certain vesting requirements, for periods up to ten years from the date of issue. The Company may no longer award options under any plans other than the 1996 Equity Incentive Plan.

A summary of the activity of these plans follows:

Weighted

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| | Number of Shares | Average Exercise Price |
|--|---------------------|---------------------------|
| Options Outstanding at December 31, 2003 | 711,328 | \$ 3.44 |
| Granted | 122,750 | \$ 4.88 |
| Exercised | (82,881) | \$ 2.29 |
| Canceled/expired | (43,500) | \$ 3.54 |
| Options Outstanding at December 31, 2004 | 707,697 | \$ 3.82 |
| Granted | 88,000 | \$ 5.19 |
| Exercised | (374,446) | \$ 3.52 |
| Canceled/expired | (14,937) | \$ 3.76 |
| Options Outstanding at December 31, 2005 | 406,314 | \$ 4.38 |
| Options Exercisable at December 31, 2005 | 172,830 | \$ 3.90 |
| Options Available for Future Grant at December 31, 2005 | 502,037 | |

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SPIRE CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS -- (CONTINUED)

DECEMBER 31, 2005 AND 2004

The following table summarizes information about stock options outstanding at December 31, 2005:

| Range of Exercise Price | Options Outstanding | | | Options Exercisable | |
|----------------------------|-----------------------|---|------------------------------------|-----------------------|-----------------------------|
| | Number Outstanding | Weighted Average Remaining Contractual Life | Weighted Average Exercise Price | Number Exercisable | Weighted Ave Exercise Pr |
| \$ 1.78 to \$ 3.11 | 44,374 | 4.23 years | \$ 2.32 | 40,874 | \$ 2.29 |
| \$ 3.12 to \$ 3.90 | 142,058 | 5.95 years | \$ 3.89 | 87,629 | \$ 3.90 |
| \$ 3.91 to \$ 4.90 | 153,195 | 8.58 years | \$ 4.33 | 25,075 | \$ 4.13 |
| \$ 4.91 to \$ 6.36 | 44,187 | 8.44 years | \$ 6.07 | 9,252 | \$ 6.03 |
| \$ 6.37 to \$10.74 | 22,500 | 6.47 years | \$ 8.58 | 10,000 | \$ 7.94 |
| | 406,314 | 7.05 years | \$ 4.38 | 172,830 | \$ 3.90 |

There were 908,351 shares reserved for issuance under all plans at December 31, 2005.

9. SALE OF LICENSES

In October 2002, the Company sold an exclusive patent license for a hemodialysis split-tip catheter to Bard Access Systems, Inc. ("Bard"), a wholly owned subsidiary of C. R. Bard, Inc., in exchange for \$5,000,000 upon the execution of the agreement, with another \$5,000,000 due upon the earlier to

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occur of: (a) the date of the first commercial sale of a licensed product by Bard; or (b) no more than 18 months after signing. The agreement further provided for two additional contingent cash payments of \$3,000,000 each upon the completion of certain milestones by Bard in 2004 and 2005. Bard had the right to cancel the agreement at any time subsequent to the second payment. During the year ended December 31, 2002, the Company recorded the initial payment under the agreement, resulting in a gain of \$4,464,929, net of direct costs. Due to the potential length of time between the first and second payments and the cancellation provisions within the agreement, the Company did not record the potential remaining payments at that time. During June 2003, in accordance with the agreement, the Company received notification from Bard of the first commercial sale, collected the \$5,000,000 payment due and recorded a gain of \$4,989,150, net of direct costs. In June 2004, the Company received the first contingent milestone payment and recorded a gain of \$3,000,000. In June 2005, the Company received the second and final contingent milestone payment and recorded a gain of \$3,000,000. There were no direct costs associated with these payments. These gains have been recorded in the accompanying consolidated statements of operations for the years ended December 31, 2005 and 2004, respectively.

In conjunction with the sale, the Company received a sublicense, which permits the Company to continue to manufacture and market hemodialysis catheters for the treatment of chronic kidney disease. In addition, the Company granted Bard a right of first refusal should the Company seek to sell the catheter business.

On May 26, 2005, the Company entered into a global consortium agreement (the "Consortium Agreement") with Nisshinbo Industries, Inc. ("Nisshinbo") for the development, manufacturing, and sales of solar photovoltaic module manufacturing equipment. Under the terms of the Consortium Agreement, Nisshinbo purchased a license to manufacture and sell the Company's module manufacturing equipment for an upfront fee plus additional royalties based on ongoing equipment sales over a ten-year period. In addition, the Company and Nisshinbo agreed, but are not obligated, to pursue joint research and development, product improvement activities and sales and marketing efforts. On June 27, 2005, the Company received JPY 400,000,000 (approximately \$3.7 million) from the sale of this permanent license. The Company has determined the fair value of the license and royalty based on an appraisal. As a result, a \$3,319,600 gain has been recognized as a gain on sale of license in the accompanying consolidated statement of operations for the year ended December 31, 2005. The balance of \$350,000 was determined to represent an advanced royalty payment and was recorded as an advance on contracts in progress. This amount is being accreted as royalty income over the ten year license period on a straight line basis. Approximately \$86,000 of royalty income was recognized during the year ended December 31, 2005.

As of June 30, 2005, JPY 400,000,000 was held in a Japanese yen account. The Company converted JPY 350,000,000 into \$3,139,295 on August 3, 2005 resulting in an approximate \$17,000 currency translation loss. The Company continues to maintain a Japanese yen account approximately JPY 33,738,000 as of December 31, 2005. As of December 31, 2005, approximately \$287,000 has been reflected in cash and cash equivalents in the accompanying

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December 31, 2005. Total currency translation loss for the year ended December 31, 2005 of \$104,039 is reflected in other expense, net in the accompanying consolidated statement of operations.

10. NASDAQ LISTING

On April 6, 2005, the Company received a letter from the Nasdaq Listing Qualifications Panel (the "Nasdaq Panel") indicating that the Company is no longer in compliance with the \$10,000,000 minimum stockholders' equity requirement for continued listing set forth in Nasdaq Marketplace Rule 4450(a)(3) (the "Rule"). The Nasdaq Panel requested that the Company provide, by April 13, 2005, the Company's plan to achieve and sustain compliance with this requirement. On April 13, 2005, the Company presented such plan to the Nasdaq Panel.

On April 25, 2005, the Company received a letter from the Nasdaq Panel informing the Company that the Nasdaq Panel was remanding this case to the Nasdaq Staff. The Nasdaq Panel indicated that it believes that the Nasdaq Staff is the appropriate body to review and evaluate the Company's plan of compliance, following its normal procedures and processes.

On April 27, 2005, the Nasdaq Staff issued a Determination letter reiterating the Nasdaq Panel's April 6, 2005 finding that the Company is no longer in compliance with the Rule, and that the Nasdaq Staff would review the Company's eligibility for continued National Market listing. The Nasdaq Staff requested that the Company provide a plan to achieve and sustain compliance with Nasdaq listing standards. On May 12, 2005, the Company submitted such a plan to the Nasdaq Staff.

On May 24, 2005, the Nasdaq Staff requested additional information from the Company regarding certain projected nonrecurring license sales that were expected to occur during the second quarter of 2005. On June 3, 2005, the Company submitted a revised plan to achieve compliance with the Rule incorporating the subject license sales. On June 6, 2005, the Company received a letter from the Nasdaq Staff stating that the Company provided a definitive plan evidencing its ability to achieve and sustain compliance with the Rule, and as such, granted the Company an extension of time to achieve compliance. The terms of the extension required the Company to file a Form 8-K providing an update on the Company's listing status. The Company made such filing on August 5, 2005. The license sales completed during the three months ended June 30, 2005 are described in Note 9 above.

On August 17, 2005, the Company received a letter from the Nasdaq Staff indicating that the Nasdaq Staff had determined that the Company complied with the Rule and that this matter was closed.

At December 31, 2005, the Company's stockholder's equity was \$9.2 million. As a result, the Company did not meet the requirements of the Rule under Standard No. 1 for continued listing on the Nasdaq National Market. However, the Company believes that it does meet Standard No. 2 for continued listing on the Nasdaq National Market as the market value of its listed securities currently exceeds \$50,000,000 and it meets all other requirements under Standard No. 2. In order to remain in compliance with Standard No. 2, the Company's market value of listed securities cannot fall below \$50,000,000 for ten consecutive trading days at any point.

11. INCOME TAXES

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There was no income tax provision (benefit) required for 2005 and 2004.

The reconciliation between the amount computed by applying the United States federal statutory tax rate of 34% to pretax income and the actual provision for income (loss) taxes follows:

| | 2005 | |
|--|-----------|-------|
| | ----- | ----- |
| Income tax expense (benefit) at statutory rate | \$ 15,035 | \$ |
| State income taxes net of federal income tax benefit | 2,781 | |
| Increase (decrease) in valuation allowance related to income tax expense | (20,714) | |
| Permanent differences | 18,206 | |
| Tax credits | (14,438) | |
| Foreign tax credits | (870) | |
| Other | -- | |
| | ----- | ----- |
| Total | \$ -- | \$ |
| | ===== | ===== |

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SPIRE CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS -- (CONTINUED)

DECEMBER 31, 2005 AND 2004

The tax effects of temporary differences that give rise to significant portions of deferred tax assets and deferred tax liabilities are as follows:

| | 2005 | |
|--|-------------|-------|
| | ----- | ----- |
| Deferred tax assets: | | |
| Accounts receivable | \$ 75,315 | |
| Accruals | 326,123 | |
| Inventories | 134,626 | |
| Net operating loss carryforwards | 2,510,398 | |
| General business credit carryforwards | 24,715 | |
| Alternative minimum tax credit carryforwards | 267,966 | |
| Foreign tax credit | 32,567 | |
| | ----- | ----- |
| Total gross deferred tax assets | 3,371,710 | |
| | ----- | ----- |
| Depreciation | (189,696) | |
| | ----- | ----- |
| Total gross deferred tax liabilities | (189,696) | |
| | ----- | ----- |
| Valuation allowance | (3,182,014) | |
| | ----- | ----- |
| Net deferred tax assets | \$ -- | |
| | ===== | ===== |

The net change in the total valuation allowance for the period ended December 31, 2005 was an increase of \$1,024,855. Gross net operating loss

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carryforwards were approximately \$6.2 million as of December 31, 2005. Included in this amount was approximately \$2.3 million attributable to equity based compensation transactions. Approximately \$944,000 of the valuation allowance will be relieved through equity if these deductions for equity based transactions are realized.

12. COMMITMENTS

Letters of Credit

Outstanding letters of credit totaled \$926,000 at December 31, 2005. The letters of credit principally secure performance obligations, and allow holders to draw funds up to the face amount of the letter of credit if the Company does not perform as contractually required. These letters of credit expire through 2007 and are 100% secured by cash..

Property Under Capital Leases and Lease Commitments

At December 31, 2005, the Company had capital leases in effect for a building and fabrication equipment. The Company also had operating leases for office space and other miscellaneous items.

The components of capitalized costs and carrying value of the property under capital leases were as follows:

| | 2005 |
|--------------------------------|--------------|
| | ----- |
| Unrelated party capital lease: | |
| Equipment | \$ 880,927 |
| Less: accumulated depreciation | (410,458) |
| | ----- |
| | \$ 470,469 |
| | ===== |
| | |
| | 2005 |
| | ----- |
| Related party capital lease: | |
| Hudson, New Hampshire building | \$ 3,390,397 |
| Less: accumulated depreciation | (1,751,706) |
| | ----- |
| | \$ 1,638,691 |
| | ===== |

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SPIRE CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS -- (CONTINUED)

DECEMBER 31, 2005 AND 2004

At December 31, 2005, future minimum lease payments for the period ended are as follows:

| | | | |
|--|-----------|---------|-----------|
| | Unrelated | Related | Unrelated |
|--|-----------|---------|-----------|

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| | Party Capital Lease | Party Capital Lease | Party Operating Leases |
|---|---------------------------|---------------------------|------------------------------|
| | ----- | ----- | ----- |
| 2006 | \$ 495,655 | \$ 870,000 | \$ 117,633 |
| 2007 | -- | 1,102,500 | 81,454 |
| 2008 | -- | 495,250 | 55,356 |
| 2009 | -- | -- | 28,704 |
| | ----- | ----- | ----- |
| Total minimum lease payments | 495,655 | 2,467,750 | \$ 283,147 |
| | ----- | ----- | ===== |
| Less amount representing interest | (48,971) | (219,768) | |
| | ----- | ----- | |
| Present value of minimum lease payments | 446,684 | 2,247,982 | |
| Less current portion | (446,684) | (734,376) | |
| | ----- | ----- | |
| Long-term portion of capital lease obligation | \$ -- | \$ 1,513,606 | |
| | ===== | ===== | |

Unrelated Party Capital Lease

In September 2001, Bandwidth entered into an agreement with GE Capital Leasing Corp, for the lease of a reactor for its wafer production line. The lease is accounted for as a capital lease. Under the lease agreement, the Company is making monthly payments of approximately \$36,000. After the initial three-year period ending in September 2004, the lease allowed for an additional two-year extension. In September 2004, the Company extended the lease term for the additional two years to September 2006. The lease includes a residual value guarantee of \$204,000 at the end of the extended period. Interest costs were assumed at 7%. For the year ended December 31, 2005, interest expense was \$35,000.

Related Party Capital Lease

In conjunction with the acquisition of Bandwidth by the Company, SPI-Trust, a Trust of which Roger G. Little, Chairman of the Board, Chief Executive Officer and President of the Company, is sole trustee and principal beneficiary, purchased from Stratos Lightwave, Inc. (Bandwidth's former owner) the building that Bandwidth occupies in Hudson, New Hampshire for \$3.7 million. Subsequently, the Company entered into a lease for the building (90,000 square feet) with SPI-Trust whereby the Company will pay \$4.1 million to the SPI-Trust over an initial five-year term expiring in 2008 with a Company option to extend for five years. In addition to the rent payments, the lease obligates the Company to keep on deposit with SPI-Trust the equivalent of three months rent (\$191,250 as of December 31, 2005.) The lease agreement does not provide for a transfer of ownership at any point. Interest costs were assumed at 7%. For the year ended December 31, 2005, interest expense was approximately \$179,000. This lease has been classified as a related party capital lease and a summary of payments (including interest) follows:

| Year | Rate Per Square Foot | Annual Rent | Monthly Rent | Security Deposit |
|-----------------------------|-------------------------|-------------|--------------|---------------------|
| ----- | ----- | ----- | ----- | ----- |
| June 1, 2003 - May 31, 2004 | \$ 6.00 | \$ 540,000 | \$ 45,000 | \$ 135,000 |
| June 1, 2004 - May 31, 2005 | 7.50 | 675,000 | 56,250 | 168,750 |
| June 1, 2005 - May 31, 2006 | 8.50 | 765,000 | 63,750 | 191,250 |
| June 1, 2006 - May 31, 2007 | 10.50 | 945,000 | 78,750 | 236,250 |
| June 1, 2007 - May 31, 2008 | 13.50 | 1,215,000 | 101,250 | 303,750 |

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\$ 4,140,000
=====

Unrelated Party Operating Leases -----

Unrelated party operating leases primarily consist of leases for copiers and the telephone system.

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SPIRE CORPORATION AND SUBSIDIARIES NOTES TO CONSOLIDATED FINANCIAL STATEMENTS -- (CONTINUED)

DECEMBER 31, 2005 AND 2004

Related Party Operating Lease -----

The Company subleased 77,000 square-feet in a building leased by Mykrolis Corporation, who in turn leased the building from SPI-Trust, a Trust of which Roger Little, Chairman of the Board, Chief Executive Officer and President of the Company, is the sole trustee and principal beneficiary. The 1985 sublease originally was for a period of ten years, was extended for a five-year period expiring on November 30, 2000 and was further extended for a five-year period expiring on November 30, 2005. The sublease agreement provided for minimum rental payments plus annual increases linked to the consumer price index. Rent expense under this sublease for the year ended December 31, 2005 and 2004 was approximately \$1,093,000 and \$1,151,000, respectively. In connection with this sublease, the Company was invoiced and paid certain SPI-Trust related expenses, including building maintenance and insurance. The Company invoiced SPI-Trust on a monthly basis and SPI-Trust reimbursed the Company for all such costs.

On November 11, 2005, the Company entered into an Extension of Lease Agreement (the "Lease Extension") directly with SPI-Trust the term of which commenced on December 1, 2005. The Lease Extension is for a period of two years and maintains the rental payments at the now current rental rate over the two (2) year period. All other terms of the Lease Extension are substantially the same as were in effect under the former lease and sublease agreements. The Company assumed certain responsibilities of Mykrolis, the tenant under the former lease, as a result of the Lease Extension including payment of all building and real estate related expenses associated with the ongoing operations of the property. The Company will allocate a portion of these expenses to SPI-Trust based on pre-established formulas utilizing square footage and actual usage where applicable. These allocated expenses will be invoiced monthly and be paid utilizing a SPI-Trust escrow account of which the Company has sole withdrawal authority. SPI-Trust is required to maintain three (3) months of its anticipated operating costs within this escrow account. The Company believes that the terms of the Lease Extension are commercially reasonable. Rent expense under the Lease Extension for the year ended December 31, 2005 was approximately \$103,000. Approximately \$9,000 was due from SPI-Trust as of December 31, 2005 for building related costs.

In conjunction with the acquisition of Bandwidth by the Company, the Company released Bandwidth from a lease agreement that had existed between Bandwidth and the Company. In November 2001, Bandwidth, under its previous owner, abandoned the space being subleased from the Company in Bedford, Massachusetts, to move to a new building and wafer fabrication lab in Hudson, New Hampshire. At that time, there were 48 months left on the lease. Subsequent to the move to Hudson, New Hampshire, Bandwidth was unable to sublease the

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Bedford, Massachusetts space, and was paying the Company for the unused space. In conjunction with the acquisition of Bandwidth in May 2003, the Company released Bandwidth from the remaining lease payments. However, the Company continued to be obligated to Mykrolis Corporation for the entire amount of the remaining lease agreement. As a result, the present value of the remaining lease obligation associated with the unused space was recorded as an assumed liability of \$1,247,241 in the purchase accounting. This lease obligation terminated in November 2005. The difference between the actual rent payment and the discounted rent payment was accreted to the consolidated statements of operations as interest expense. Interest of 4.75% had been assumed on this obligation. For the year ended December 31, 2005, interest expense was approximately \$11,000.

Agreement with BP Solarex -----

On October 8, 1999, the Company entered into an agreement with BP Solarex ("BPS") in which BPS agreed to purchase certain production equipment built by the Company, for use in the Company's Chicago factory ("Spire Solar Chicago") and in return the Company agreed to purchase solar cells of a minimum of two megawatts per year over a five-year term for a fixed fee from BPS (the "Purchase Commitment"). BPS had the right to reclaim the equipment if the Company failed to meet its obligations in the Purchase Commitment. The proceeds from the sale of the production equipment purchased by BPS were classified as an unearned purchase discount in the Company's consolidated balance sheets in prior periods. The Company had amortized this discount as a reduction to cost of sales as it purchased materials from BPS. In 2003 the Company and BPS retroactively amended the agreement to include all purchases of solar modules, solar systems, inverter systems and other system equipment purchased by the Company from BPS in the purchase commitment calculation. Amortization of the purchase discount amounted to approximately \$65,000 and \$160,000 for the years ended December 31, 2005 and 2004, respectively. The production equipment had been classified as a component of fixed assets. Depreciation amounted to approximately \$211,000 for the year ended December 31, 2005.

In addition, the agreement contained a put option for BPS to have the Company create a separate legal entity for Spire Solar Chicago and for BPS to convert the value of the equipment and additional costs, as defined, into equity of the

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SPIRE CORPORATION AND SUBSIDIARIES NOTES TO CONSOLIDATED FINANCIAL STATEMENTS -- (CONTINUED)

DECEMBER 31, 2005 AND 2004

new legal entity. The percentage ownership in the joint venture would be determined based on the cumulative investments by BPS and the Company. The amended agreement also allowed the Company to terminate the agreement on 30 days notice in consideration for a termination payment based on the aggregate amount of Spire purchases of BPS products and the fair market value of the production equipment purchased by BPS at the time of the termination election.

On August 16, 2005, the Company entered into a Settlement and Contract Termination Agreement (the "Termination Agreement") with BPS effective September 30, 2005. Under the terms of the Termination Agreement, the Company and BPS agreed to terminate the amended agreement including the Purchase Commitment. In exchange for release of the purchase commitment, the Company paid BPS \$275,000 and retained ownership of the production equipment. The unamortized unearned purchase discount as of the effective date was approximately \$1,205,000 and the net book value of the production equipment was approximately \$287,000. As result

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of this action, Spire reevaluated the recoverability of the long-lived assets associated with this segment as part of its third quarter review. Based on cash flow projections for the Solar System segment, the Company determined that the production equipment was impaired and should be written-off.

The Company has recorded an approximate \$593,000 gain from these actions, which is reflected as a gain on extinguishment of purchase commitment in the accompanying consolidated statement of operations for the year ended December 31, 2005. The components of this gain are outlined below:

| | |
|---|--------------|
| Unearned purchase discount | \$ 1,205,000 |
| Net book value of production equipment | (287,000) |
| Payment to extinguish purchase commitment | (275,000) |
| Accrued relocation costs | (50,000) |
| | ----- |
| Gain on extinguishment of purchase commitment | \$ 593,000 |
| | ===== |

13. EMPLOYEE BENEFIT PLANS

Profit Sharing Plan

In 1985, the Company adopted a profit sharing plan under Section 401(k) of the Internal Revenue Code. This plan allows employees to defer up to 17.5% of their income up to certain dollar limits on a pretax basis through contributions to the plan. No matching contributions have been made to the plan for the years ended December 31, 2005 and 2004, respectively.

Deferred Compensation Plan

Effective January 1, 2002, the Company adopted the Spire Corporation Non-Qualified Deferred Compensation Plan (the "Plan") for Roger Little, Chairman of the Board, Chief Executive Officer and President of the Company (the "Participant"). Under this 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 over 5 years. The Company records these contributions as selling, general and administration expense when made. The Trustee makes all investment decisions for the Trust on behalf of the Participant. The Company has not guaranteed a return on investment for the Participant, however, all earnings and losses on the Plan assets are borne by the Participant. All contributions and earnings are fully vested to the Participant when made but are subject to the Company's creditors in the event of bankruptcy. As a result, the assets held in the Plan have been recorded as available-for-sale investments in the consolidated balance sheet with a corresponding liability being recorded as deferred compensation. Unrealized gains and losses on the available-for-sale investments are recorded as accumulated other comprehensive income within the equity section of the consolidated balance sheet. A corresponding entry to deferred compensation is made to increase (decrease) the amounts due the Participant resulting from the changes in the asset value with an offsetting charge or credit to selling, general and administrative expense. Compensation expense was approximately \$250,000 in each of the years ended December 31, 2005 and 2004.

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DECEMBER 31, 2005 AND 2004

14. EARNINGS (LOSS) PER SHARE

The following table provides a reconciliation of the denominators of the Company's reported basic and diluted earnings (loss) per share computations for the years ended December 31:

| | 2005 | 2004 |
|--|-----------|-----------|
| | ----- | ----- |
| Weighted average number of common and common equivalent shares outstanding - basic | 6,975,347 | 6,809,462 |
| Add: Net additional common shares upon assumed exercise of common stock options | 261,782 | -- |
| | ----- | ----- |
| Weighted average number of common and common equivalent shares - diluted | 7,237,129 | 6,809,462 |
| | ===== | ===== |

For the year ended December 31, 2005, 32,500 shares of common stock issuable relative to stock options had exercise prices per share that exceeded the average market price of the Company's common stock and were excluded from the calculation of diluted shares since their inclusion would be anti-dilutive.

For the year ended December 31, 2004, 78,250 shares of common stock issuable relative to stock options had exercise prices per share that exceeded the average market price of the Company's common stock and were excluded from the calculation of diluted shares since their inclusion would be anti-dilutive. In addition, 209,959 shares of common stock issuable relative to stock options were excluded from the calculation of dilutive shares since the inclusion of such shares would be anti-dilutive due to the Company's net loss position.

15. LEGAL MATTERS

From time to time, the Company is subject to legal proceedings and claims arising from the conduct of its business operations. The Company does not expect the outcome of these proceedings, either individually or in the aggregate, to have a material adverse effect on its financial position, results of operations, or cash flows.

The Company has been named as a defendant in 58 cases filed from August 2001 to July 2003 in state courts in Texas by persons claiming damages from the use of allegedly defective mechanical heart valves coated by a process licensed by the Company to St. Jude Medical, Inc., the valve manufacturer, which has also been named as a defendant in the cases. In June 2003, a judge in a state court in Harris County, Texas agreed to grant the Company's motion for summary judgment based upon the principle of federal preemption with regard to 57 of those cases and to order that the cases against the Company be dismissed with prejudice. An order to this effect was signed in late July 2003. The remaining case is still pending, and due to aspects of its fact situation is not subject to the principle of federal preemption. From August 2003 to date, a total of seven new cases were filed against the Company in courts in Harris County. Activity with regard to these cases is likely to occur only after the disposition of the original 57 cases is finally settled. The plaintiffs whose cases were dismissed have filed appeals with the Texas appellate court. In June 2005, the Texas Court of Appeals upheld the summary judgment granted by the lower court. Attorneys for the Company anticipate that the plaintiffs may file a motion for rehearing, and an appeal with the Texas Supreme Court is also

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possible. Attorneys who represent the Company with respect to these cases in Texas do not believe at this time that the actions of a federal district court judge in Minnesota in denying St. Jude Medical's request for summary judgment will materially affect the Company's position in the Texas complaints.

During the second quarter of 2005 a suit was filed by Arrow International, Inc. against Spire Biomedical, Inc., a wholly owned subsidiary of the Company, alleging patent infringement by the Company. The complaint claims one of the Company's catheter products induces and contributes to infringement when medical professionals insert it. The Company has responded to the complaint denying all allegations and has filed certain counterclaims. The Company intends to vigorously defend this matter. The parties are engaged in the discovery process.

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SPIRE CORPORATION AND SUBSIDIARIES NOTES TO CONSOLIDATED FINANCIAL STATEMENTS -- (CONTINUED)

DECEMBER 31, 2005 AND 2004

16. OPERATING SEGMENTS AND RELATED INFORMATION

The following table presents certain operating division information in accordance with the provisions of SFAS No. 131, "Disclosure about Segments of an Enterprise and Related Information".

| | Solar Equipment | Solar Systems | Spire Biomedical | Optoelectronics | Other |
|---------------------------------|--------------------|------------------|---------------------|-----------------|-------|
| December 31, 2005 | | | | | |
| Net sales and revenues | \$ 7,647,709 | \$ 1,744,889 | \$ 10,578,003 | \$ 2,451,009 | \$ |
| Earnings (loss) from operations | 1,601,356 | (683,537) | 2,170,215 | (2,740,071) | |
| Identifiable assets | 2,543,511 | 717,995 | 4,042,962 | 4,392,008 | 6,255 |
| Capital expenditures | 7,154 | 86,940 | 183,847 | 84,488 | 65 |
| Depreciation | 56,968 | 228,435 | 436,854 | 1,437,073 | 207 |
| December 31, 2004 | | | | | |
| Net sales and revenues | \$ 2,683,243 | \$ 3,316,955 | \$ 8,897,340 | \$ 2,380,498 | \$ |
| Earnings (loss) from operations | (2,086,038) | (269,833) | 774,706 | (2,262,808) | |
| Identifiable assets | 2,739,238 | 2,144,876 | 3,779,262 | 5,581,855 | 5,859 |
| Capital expenditures | 45,687 | 1,613 | 246,542 | 58,848 | 54 |
| Depreciation | 75,419 | 297,635 | 415,530 | 1,426,794 | 241 |

The following table shows net sales and revenues by geographic area (based on customer location for the years ended December 31):

| | 2005 | % | 2004 | % |
|---------|--------------|-----|--------------|-----|
| Foreign | \$ 7,463,000 | 33% | \$ 2,524,000 | 15% |

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| | | | | |
|---------------|---------------|-------|---------------|-------|
| United States | 14,959,000 | 67% | 14,754,000 | 85% |
| | ----- | ----- | ----- | ----- |
| | \$ 22,422,000 | 100% | \$ 17,278,000 | 100% |
| | ===== | ===== | ===== | ===== |

The Company's operations are focused on three primary business areas: Spire Solar (comprised of two business units, solar equipment and solar systems), Spire Biomedical (comprised of biomedical and biophotonics research) and optoelectronics (comprised primarily of Bandwidth Semiconductor, LLC). Spire Solar and Spire Biomedical operate out of the Company's facility in Bedford, Massachusetts. Bandwidth Semiconductor LLC operates out of the Company's facility in Hudson, New Hampshire. Each business unit is independently managed and has separate financial results that are reviewed by the Board of Directors and Chief Executive Officer and the chief executive officers of each operating division.

Earnings (loss) from operations is net sales less cost of sales, selling, general and administrative expenses and gain on sales of licenses, but is not affected either by non-operating income or by income taxes. The Spire Biomedical segment benefitted from a \$3,000,000 gain on sale of license in each of 2005 and 2004. The Solar Equipment segment benefitted from a \$3,319,600 gain on sale of license in 2005. In calculating earnings from operations for individual business units, substantial administrative expenses incurred at the operating level that are common to more than one segment are allocated on a net sales basis. Certain corporate expenses of an operational nature are also allocated to the divisions based on factors including occupancy, employment, and purchasing volume. All intercompany transactions have been eliminated.

Revenues from contracts with United States government agencies for 2005 and 2004 were approximately \$3,233,000 and \$2,837,000, or 14% and 16% of consolidated net sales and revenues, respectively

No customer accounted for more than 10% of gross sales during 2005. One customer accounted for approximately 15% of the Company's gross sales during 2004. One customer represented approximately 19% and one customer represented approximately 12% of net account receivables, trade at December 31, 2005 and 2004, respectively.

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ITEM 8. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND

----- FINANCIAL DISCLOSURE -----

None.

ITEM 8A. CONTROLS AND PROCEDURES

----- Evaluation of Disclosure Controls and Procedures -----

As required by Rule 13a-15 under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), the Company carried out an evaluation under the supervision and with the participation of the Company's management, including the Chief Executive Officer and President and the Chief Financial Officer, of the effectiveness of the Company's disclosure controls and procedures as of December 31, 2005. In designing and evaluating the Company's disclosure controls

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and procedures, the Company and its management recognize that there are inherent limitations to the effectiveness of any system of disclosure controls and procedures, including the possibility of human error and the circumvention or overriding of the controls and procedures. Accordingly, even effective disclosure controls and procedures can only provide reasonable assurance of achieving their desired control objectives. Additionally, in evaluating and implementing possible controls and procedures, the Company's management was required to apply its reasonable judgment. Furthermore, management considered certain matters deemed by the Company's independent auditors to constitute a material weakness in the Company's internal control over financial reporting described below. Based upon the required evaluation, the Chief Executive Officer and President and the Chief Financial Officer concluded that as of December 31, 2005, due to the material weakness in internal control over financial reporting described below, the Company's disclosure controls and procedures were not effective to ensure that information required to be disclosed by the Company in the reports it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms.

On March 21, 2006, the Company's independent auditor, Vitale, Caturano & Company, Ltd. ("VCC") issued a letter advising management and the Audit Committee, that, in connection with its audit of the Company's consolidated financial statements for the year ended December 31, 2005, it noted certain matters involving internal control and its operation that it considered to be a material weakness under standards of the Public Company Accounting Oversight Board. VCC noted that, since its March 2005 letter, in which VCC noted material weaknesses in the Company's internal controls in connection with its audit of the Company's 2004 financial statements, the Company has made significant strides over the past year to improve its internal control structure. These include:

- o An improved reconciliation process;
- o A disciplined and timely monthly close process; and
- o Detailed reviews of monthly close packages by the appropriate levels of management.

However, VCC also noted that improvements still need to be made in the reconciliation and documentation and information flow processes. In particular, the Company lost several key individuals who were integral to the accounting department in general and the closing process specifically. While the finance group was able to close the books and analyze the accounts on a timely basis, the staff was resource constrained and the established controls, policies and procedures could not be fully implemented during the year end close. The Company supplemented the staff with outside assistance and the Chief Financial Officer assumed responsibility of the reconciliations of certain accounts and various review roles. However, VCC noted that the finance department will not be alleviated and control structure improved until such time as the full finance team is assembled.

In addition, VCC noted that the Company does not have sufficient internal knowledge and expertise of its enterprise reporting system, Solomon, including technical knowledge. The Company utilizes external consultants to help them develop reports and troubleshoot the system; however without a fully dedicated resource, the risk of errors being generated in or by the system is significant. VCC noted that the Company should develop a comprehensive training program associated with the system so that employees are aware of the system and all of its capabilities in order to obtain the efficiencies the system can provide. The full utilization and knowledge of the ERP system is critical to the Company's internal control over financial reporting. The Company should focus on developing the in-house knowledge of the ERP system, either through trainings or

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recruiting of an experienced information technology professional with the requisite knowledge.

The Company concurs with VCC's findings noted above and is continuing to make changes in its internal controls and procedures. Unfortunately, the Company was operating without a Controller, Assistant Controller and Senior Cost Accountant during the latter half of 2005. These positions are critical to the oversight and review of the finance group's output. As VCC noted, the Company supplemented those functions through the use of outside consultants and through the Chief Financial Officer assuming certain preparation and review roles. Unfortunately, this weakens the internal control structure as the review process is compressed and streamlined. The Company has hired a Senior Cost Accountant and expects to have its Assistant Controller position filled during the second quarter of 2006. The Company has had difficulty recruiting a full time Controller and will continue to search for a replacement. The Company has made significant strides in its monthly closing processes and expects that its internal controls will improve once a full finance staff is in place.

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Changes in Internal Control Over Financial Reporting

There was no change in the Company's internal control over financial reporting that occurred during the fourth fiscal quarter of 2005 that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

ITEM 8B. OTHER INFORMATION

On March 16, 2006, Spire Corporation (the "Company") entered into a Turn-Key Project Agreement to provide a privately owned solar firm located in Europe (the "Purchaser"), a commercially sized multi-megawatt turn-key Photovoltaic Cell Manufacturing Line (the "Cell Line") for \$6.75 million (to be paid over the course of two years upon the achievement of certain milestones). The Cell Line is scheduled to ship during the fourth quarter of 2006 and is subject to various design, manufacturing and performance specifications. This Company is subject to certain penalty provisions if the Cell Line does not meet agreed-upon performance criteria within a set period of time. Under this agreement, the Company also agreed to supply the Purchaser up to 1,500,000 mono-crystalline wafers or multi-crystalline wafers (meeting certain electrical capacity and efficiency standards) prior to the starting date of production of cells by the Cell Line or within 60 days after shipment of the Cell Line. The actual amount of wafers ordered and the price of such wafers is subject to the mutual agreement of the parties, and the Purchaser may cancel this non-exclusive arrangement at any time. The price for such wafer supply is in addition to the purchase price for the Cell Line.

In addition, concurrently with the execution of the Turn-Key Project Agreement, the Company and the Purchaser entered into a Wafer Supply Agreement under which the Company agreed to supply the Purchaser up to an additional 4,500,000 wafers (meeting certain electrical capacity and efficiency standards) during the first three quarters of 2007. The actual amount of wafers ordered and the price of such wafers is subject to the mutual agreement of the parties, and the Purchaser may cancel this non-exclusive arrangement at any time.

PART III

ITEM 9. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT; COMPLIANCE WITH

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SECTION 16(A) OF THE EXCHANGE ACT

Information concerning the directors and executive officers of the Company is set forth under "Election of Directors" and "Executive Officers" in the Proxy Statement for the Special Meeting in Lieu of 2006 Annual Meeting of Stockholders ("Proxy Statement") and is incorporated herein by reference. Information concerning compliance with Section 16(a) of the Exchange Act is set forth under "Compliance with Section 16(a) of the Securities Exchange Act of 1934" in the Proxy Statement and is incorporated herein by reference.

The Company has adopted a Code of Business Conduct and Ethics (the "Code") that applies to its principal executive officer, principal financial officer and principal accounting officer or controller, as well as to directors, officers and employees generally. The Code sets forth written standards that are reasonably designed to deter wrongdoing and to promote (1) honest and ethical conduct, (2) full, fair, accurate, timely and understandable disclosure in reports and documents that the Company files with the SEC and in other public communications made by the Company, (3) compliance with applicable governmental laws, rules and regulations, (4) the prompt internal reporting of violations of the Code to an appropriate person or persons identified in the Code and (5) accountability for adherence to the Code. The Company will provide to any person without charge, upon request, a copy of the Code. Any person wishing a copy should write to Michael W. O'Dougherty, Clerk, Spire Corporation, One Patriots Park, Bedford, Massachusetts 01730-2396.

A copy of the Code is incorporated by reference as an exhibit to this Form 10-KSB.

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ITEM 10. EXECUTIVE COMPENSATION

Information concerning executive compensation is set forth under "Compensation of Officers and Directors" in the Proxy Statement and is incorporated herein by reference.

ITEM 11. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Information concerning security ownership of certain beneficial owners and management is set forth under "Ownership of Securities" in the Proxy Statement and is incorporated herein by reference. Information regarding equity compensation plan information is set forth under "Compensation of Officers and Directors" in the Proxy Statement and is incorporated herein by reference.

ITEM 12. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

Information concerning certain relationships and related transactions is set forth under "Certain Relationships and Related Transactions" in the Proxy Statement and is incorporated herein by reference.

ITEM 13. EXHIBITS

The following Exhibits are either filed herewith or are incorporated by

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reference as may be indicated.

- 3(a) Articles of Organization as amended, incorporated by reference to Exhibit 3(a) to the Company's Form 10-QSB for the quarter ended June 30, 1997
- 3(b) By-Laws, as amended, incorporated by reference to Exhibit 3(b) to the Company's Form 10-K for the year ended December 31, 1989
- 10(a) Sublease Agreement with Millipore Corporation as landlord for facility at Bedford, Massachusetts dated November 25, 1985, incorporated by reference to Exhibit 10(a) to the Company's Form 10-K for the year ended December 31, 1985
- 10(b) Amendment to Sublease Agreement with Millipore Corporation as landlord for facility at Bedford, Massachusetts dated December 30, 1999, incorporated by reference to Exhibit 10(b) to the Company's Form 10-KSB for the year ended December 31, 1999 ("1999 10-KSB")
- 10(c) Sublease Agreement with Methode Electronics, Inc. as tenant for a portion of the facility at Bedford, Massachusetts dated December 29, 1999, incorporated by reference to Exhibit 10(c) to the 1999 10-KSB
- 10(d) Asset Purchase Agreement dated as of November 18, 1999 with Methode Electronics, Inc. and Methode Massachusetts, Inc., incorporated by reference to Exhibit 1 to the Company's Form 8-K dated December 29, 1999
- 10(e) Employment Agreement with Roger G. Little dated as of January 1, 2002, incorporated by reference to Exhibit 10(e) to the Company's Form 10-KSB for the year ended December 31, 2001 ("2001 10-KSB")
- 10(f) Deferred Compensation Plan with Roger G. Little dated as of January 1, 2002, incorporated by reference to Exhibit 10(f) to 2001 10-KSB
- 10(g) Spire Corporation 1985 Incentive Stock Option Plan, incorporated by reference to Exhibit 10(d) to the Company's Form 10-K for the year ended December 31, 1984
- 10(h) Spire Corporation 401(k) Profit Sharing Plan, incorporated by reference to Exhibit 10(h) to the Company's Form 10-KSB for the year ended December 31, 2003 ("2003 10-KSB")
- 10(i) Spire Corporation 1996 Equity Incentive Plan, incorporated by reference to Appendix A to the Company's Proxy Statement dated April 15, 2004
- 10(j) Purchase Agreement dated May 23, 2003 with Stratos Lightwave and Bandwidth Semiconductor, LLC, incorporated by reference to Exhibit 10(h) to the Company's Form 10-QSB for the quarter ended June 30, 2003
- 10(k) Lease Agreement dated May 23, 2003 by and between Roger G. Little, Trustee of SPI-Trust as Landlord and Spire Corporation as Tenant, incorporated by reference to Exhibit 10(i) to the Company's Form 10-QSB for the quarter ended June 30, 2003

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- 10(l) Trust Agreement dated April 1, 2004 between the Company and Riggs Bank N.A. as Trustee of the Company's 401(k) Profit Sharing Plan, incorporated by reference to Exhibit 10(l) to the Company's Form 10-KSB for the year ended December 31, 2004 ("2004 10-KSB")
- 10(m) Amendment No. One dated November 18, 2004 to Employment Agreement for Roger G. Little, incorporated by reference to Exhibit 10(m) to the Company's 2004 10-KSB
- 10(n) Development, Manufacturing, and Sales Consortium Agreement between Nisshinbo Industries, Inc. and Spire Corporation, with an effective date of 16 May 2005, incorporated by reference to Exhibit 10(n) to the Company's For 10-QSB for the quarter ended June 30, 2005.*
- 10(o) Extension of Lease Agreement dated November 11, 2005 between Roger G. Little, Trustee of SPI-Trust and Spire Corporation (lease of premises, 77,037 sq. ft.) (filed herewith)
- 10(p) Amendment Number Four to the Spire Corporation 401(k) Profit Sharing Plan dated November 21, 2005 (filed herewith)
- 14 Code of Business Conduct and Ethics incorporated by reference to Exhibit 14 to the 2003 10-KSB
- 21 Subsidiaries of the Registrant incorporated by reference to Exhibit 21 to the 2003 10-KSB
- 23 Consent of Independent Registered Public Accounting Firm (filed herewith)
- 31.1 Certification of the Chairman of the Board, Chief Executive Officer and President pursuant to ss.302 of the Sarbanes-Oxley Act of 2002 (filed herewith)
- 31.2 Certification of the Chief Financial Officer pursuant to ss.302 of the Sarbanes-Oxley Act of 2002 (filed herewith)
- 32.1 Certification of the Chairman of the Board, Chief Executive Officer and President pursuant to 18 U.S.C. ss.1350, as adopted pursuant to ss.906 of the Sarbanes-Oxley Act of 2002 (filed herewith)
- 32.2 Certification of the Chief Financial Officer pursuant to 18 U.S.C. ss.1350, as adopted pursuant to ss.906 of the Sarbanes-Oxley Act of 2002 (filed herewith)

* Portions of this Exhibit have been omitted pursuant to a grant of confidential treatment.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Information concerning principal accountant fees and services is set forth under "Disclosure of Principal Accountant Fees and Services" in the Proxy Statement.

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In accordance with Section 13 or 15(d) of the Exchange Act, the registrant caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

SPIRE CORPORATION

By: /s/ Roger G. Little March 21, 2006

Roger G. Little
Chairman of the Board, Chief
Executive Officer, and President

In accordance with the Exchange Act, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

| Signature ----- | Title ----- | Date ---- |
|---|--|----------------|
| /s/ Roger G. Little ----- Roger G. Little | Chairman of the Board, Chief Executive Officer and President | March 21, 2006 |
| /s/ James F. Parslow ----- James F. Parslow | Chief Financial Officer | March 21, 2006 |
| /s/ Udo Henseler ----- Udo Henseler | Director | March 21, 2006 |
| /s/ David R. Lipinski ----- David R. Lipinski | Director | March 21, 2006 |
| /s/ Mark C. Little ----- Mark C. Little | Chief Executive Officer, Spire Biomedical and Director | March 21, 2006 |
| /s/ Michael J. Magliochetti ----- Michael J. Magliochetti | Director | March 21, 2006 |
| /s/ Guy L. Mayer ----- Guy L. Mayer | Director | March 21, 2006 |
| /s/ Roger W. Redmond ----- Roger W. Redmond | Director | March 21, 2006 |

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| Exhibit ----- | Description ----- |
|------------------|--|
| 10(o) | Extension of Lease Agreement dated November 11, 2005 between Roger G. Little, Trustee of SPI-Trust and Spire Corporation (lease of premises, 77,037 sq. ft.) |
| 10(p) | Amendment Number Four to the Spire Corporation 401(k) Profit Sharing Plan dated November 21, 2005 |
| 23 | Consent of Independent Registered Public Accounting Firm |
| 31.1 | Certification of the Chairman of the Board, Chief Executive Officer and President pursuant to ss.302 of the Sarbanes-Oxley Act of 2002 |
| 31.2 | Certification of the Chief Financial Officer pursuant to ss.302 of the Sarbanes-Oxley Act of 2002 |
| 32.1 | Certification of the Chairman of the Board, Chief Executive Officer and President pursuant to 18 U.S.C. ss.1350, as adopted pursuant to ss.906 of the Sarbanes-Oxley Act of 2002 |
| 32.2 | Certification of the Chief Financial Officer pursuant to 18 U.S.C. ss.1350, as adopted pursuant to ss.906 of the Sarbanes-Oxley Act of 2002 |