



## SCHEDULE 14A INFORMATION

### Proxy Statement Pursuant to Section 14(a) of the Securities Exchange Act of 1934 (Amendment No.     )

Filed by the Registrant

Filed by a Party other than the Registrant

Check the appropriate box:

- Preliminary Proxy Statement
- Definitive Proxy Statement
- Definitive Additional Materials
- Soliciting Material Pursuant to §240.14a-11(c) or §240.14a-12
- Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))

## MKS Instruments, Inc.

*(Name of Registrant as Specified In Its Charter)*

*(Name of Person(s) Filing Proxy Statement)*

### Payment of Filing Fee (Check the appropriate box):

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

- 1) Title of each class of securities to which transaction applies:
- 2) Aggregate number of securities to which transaction applies:
- 3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (Set forth the amount on which the filing fee is calculated and state how it was determined):
- 4) Proposed maximum aggregate value of transaction:
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Fee paid previously with preliminary materials.

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

- 1) Amount Previously Paid:
- 2) Form, Schedule or Registration Statement No.:
- 3) Filing Party:
- 4) Date Filed:



**MKS INSTRUMENTS, INC.**  
90 Industrial Way  
Wilmington, Massachusetts 01887

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March 23, 2005

Dear Shareholder:

You are cordially invited to attend the Annual Meeting of Shareholders of MKS Instruments, Inc. (the "Company") to be held on Monday, May 9, 2005, at 10:00 a.m. at the Andover Country Club, 60 Canterbury Street, Andover, Massachusetts 01810.

The enclosed notice of Annual Meeting and proxy statement describe the business to be transacted at the Annual Meeting and provide additional information about the Company that you should know when voting your shares. The principal business at the Annual Meeting will be to elect Class III Directors, approve the Company's Second Restated By-Laws and ratify the selection of independent auditors for fiscal 2005.

Whether or not you plan to attend the Annual Meeting, please complete, date, sign and return your Proxy Card promptly in the enclosed envelope, which requires no postage if mailed in the United States. If you attend the Annual Meeting, you may vote in person if you wish, even if you have previously returned your Proxy Card.

On behalf of the Board of Directors, I would like to express our appreciation for your continued interest in the affairs of the Company.

Sincerely,

JOHN R. BERTUCCI  
*Chairman and Chief Executive Officer*

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**MKS INSTRUMENTS, INC.**

**90 Industrial Way  
Wilmington, Massachusetts 01887**

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**NOTICE OF 2005 ANNUAL MEETING OF SHAREHOLDERS  
To Be Held On May 9, 2005**

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To the Shareholders:

NOTICE IS HEREBY GIVEN that the Annual Meeting of Shareholders of MKS INSTRUMENTS, INC. (the "Company"), a Massachusetts corporation, will be held on Monday, May 9, 2005 at 10:00 a.m. at the Andover Country Club, 60 Canterbury Street, Andover, Massachusetts 01810. At the meeting, shareholders will consider and vote on the following matters:

1. To elect two Class III Directors, each for a three year term;
2. To approve the Company's Second Restated By-Laws; and
3. To ratify the selection of PricewaterhouseCoopers LLP as the Company's independent auditors for the year ending December 31, 2005.

The Board of Directors has fixed the close of business on March 3, 2005 as the record date for the determination of shareholders entitled to notice of, and to vote at, the Annual Meeting and any adjournment or adjournments thereof. The stock transfer books of the Company will remain open for the purchase and sale of the Company's Common Stock.

A copy of the Company's Annual Report to Shareholders for the year ended December 31, 2004, which contains consolidated financial statements and other information of interest to shareholders, accompanies this Notice and the enclosed Proxy Statement.

If you would like to attend the Annual Meeting and your shares are held by a broker, bank or other nominee, you must bring to the Annual Meeting a letter from the nominee confirming your beneficial ownership of such shares. You must also bring a form of personal identification. In order to vote your shares at the Annual Meeting, you must obtain from the nominee a proxy issued in your name.

By Order of the Board of Directors

RICHARD S. CHUTE  
*Secretary*

Wilmington, Massachusetts  
March 23, 2005

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**IMPORTANT**

**WHETHER OR NOT YOU EXPECT TO ATTEND IN PERSON, PLEASE PROMPTLY SIGN, DATE, AND RETURN THE ENCLOSED PROXY. PROMPTLY SIGNING, DATING, AND RETURNING THE PROXY WILL SAVE THE COMPANY THE EXPENSE AND EXTRA WORK OF ADDITIONAL SOLICITATION. AN ADDRESSED ENVELOPE FOR WHICH NO POSTAGE IS REQUIRED IF MAILED IN THE UNITED STATES IS ENCLOSED FOR THAT PURPOSE. SENDING IN YOUR PROXY WILL NOT PREVENT YOU FROM VOTING YOUR STOCK AT THE ANNUAL MEETING IF YOU DESIRE TO DO SO, AS YOUR PROXY IS REVOCABLE AT YOUR OPTION.**

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# **MKS INSTRUMENTS, INC.**

**90 Industrial Way  
Wilmington, Massachusetts 01887**

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## **PROXY STATEMENT**

This Proxy Statement is furnished in connection with the solicitation of proxies by the Board of Directors of MKS Instruments, Inc. (the "Company" or "MKS"), a Massachusetts corporation, for use at the Annual Meeting of Shareholders to be held on May 9, 2005, at 10:00 a.m. at the Andover Country Club, 60 Canterbury Street, Andover, Massachusetts 01810, and at any adjournment or postponement thereof (the "Annual Meeting").

All proxies will be voted in accordance with the shareholders' instructions. If no choice is specified in the proxy, the shares will be voted in favor of the matters set forth in the accompanying Notice of 2005 Annual Meeting of Shareholders. Any proxy may be revoked by a shareholder at any time before its exercise by delivery of written revocation to the Secretary of the Company. Attendance at the Annual Meeting will not in itself be deemed to revoke a Proxy unless the shareholder gives affirmative notice at the Annual Meeting that the shareholder intends to revoke the proxy and vote in person.

## **VOTING SECURITIES AND VOTES REQUIRED**

At the close of business on March 3, 2005, the record date for the determination of shareholders entitled to notice of and to vote at the Annual Meeting, there were issued and outstanding and entitled to vote 53,897,138 shares of common stock, no par value per share, of the Company (the "Common Stock"). Each share entitles the record holder to one vote on each matter submitted at the Annual Meeting.

Under the Company's Amended and Restated By-Laws (the "By-Laws"), the holders of a majority of the shares of Common Stock issued and outstanding and entitled to vote at the Annual Meeting shall constitute a quorum for the transaction of business at the Annual Meeting. Shares of Common Stock present in person or represented by proxy (including "broker non-votes" and shares which abstain or do not vote with respect to one or more of the matters presented for shareholder approval) will be counted for purposes of determining whether a quorum exists at the Annual Meeting.

The affirmative vote of the holders of a plurality of the shares of Common Stock voting on the matter is required for the election of Directors. The approval of the Second Restated By-Laws requires the approval of 66<sup>2</sup>/<sub>3</sub>% of the shares of Common Stock outstanding and entitled to vote on the matter. The ratification of PricewaterhouseCoopers LLP ("PwC") requires the approval of the holders of a majority of the shares of Common Stock present or represented by proxy at the Annual Meeting and voting on the matter.

Shares held by shareholders who abstain from voting as to a particular matter, and "broker non-votes," which are shares held in "street name" by brokers or nominees, who indicate on their proxies that they do not have discretionary authority to vote such shares as to a particular matter, will not be counted as votes in favor of such matter, and also will not be counted as shares voting on such matter. Accordingly, abstentions and broker non-votes will have no effect on the voting on a matter that requires the affirmative vote of a certain percentage of the shares voting on the matter.

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THE NOTICE OF ANNUAL MEETING, THIS PROXY STATEMENT AND THE COMPANY'S ANNUAL REPORT TO SHAREHOLDERS FOR THE YEAR ENDED DECEMBER 31, 2004 ARE BEING MAILED TO SHAREHOLDERS ON OR ABOUT MARCH 29, 2005. A COPY OF THE COMPANY'S ANNUAL REPORT ON FORM 10-K FOR THE YEAR ENDED DECEMBER 31, 2004 AS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION (THE "COMMISSION"), EXCLUDING EXHIBITS, WILL BE FURNISHED WITHOUT CHARGE TO ANY SHAREHOLDER UPON WRITTEN REQUEST TO: INVESTOR RELATIONS DEPARTMENT, MKS INSTRUMENTS, INC., 90 INDUSTRIAL WAY, WILMINGTON, MA 01887. EXHIBITS WILL BE PROVIDED UPON WRITTEN REQUEST AND PAYMENT OF AN APPROPRIATE PROCESSING FEE.

**SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT**

The following table sets forth certain information with respect to the beneficial ownership of Common Stock by (i) each current director of the Company; (ii) the executive officers named in the Summary Compensation Table below; (iii) each shareholder known to the Company to be the beneficial owner of more than 5% of the outstanding shares of Common Stock; and (iv) all directors and executive officers of the Company as a group. Unless otherwise indicated in the footnotes to the table, (i) all information set forth in the table is as of January 31, 2005; and (ii) the address for each director and executive officer of the Company is: c/o MKS Instruments, Inc., 90 Industrial Way, Wilmington, Massachusetts 01887.

<u>Name of Beneficial Owners</u>	<u>Number of Shares Beneficially Owned(1)</u>	<u>Percentage of Class Outstanding</u>
<i>Named Executive Officers and Directors</i>		
John R. Bertucci	9,558,000(2)	17.7%
Leo Berlinghieri	387,578(3)	*
Ronald C. Weigner	423,823(3)	*
Gerald G. Colella	258,165(4)	*
John A. Smith	143,230(5)	*
Robert R. Anderson	89,572(6)	*
James G. Berges	0	*
Richard S. Chute	55,092(3)	*
Hans-Jochen Kahl	38,069(7)	*
Owen W. Robbins	55,092(3)	*
Louis P. Valente	48,310(3)	*
<i>Other 5% shareholders</i>		
Emerson Electric Co. 8000 West Florissant Avenue St. Louis, MO 63136	10,028,571(8)	18.6%
The TCW Group, Inc. 865 South Figueroa Street Los Angeles, CA 90017	3,065,072(9)	5.7%
T. Rowe Price Associates, Inc. 100 East Pratt Street Baltimore, MD 21202	2,769,913(10)	5.1%
All directors and officers as a group (14 persons)	11,680,307(11)	20.9%

\* Represents less than 1% of the outstanding Common Stock.

- (1) The Company believes that each shareholder has sole voting and investment power with respect to the shares listed, except as otherwise noted. The number of shares beneficially owned by each shareholder is determined under rules of the U.S. Securities and Exchange Commission (the "Commission"), and the information is not necessarily indicative of ownership for any other purpose. Under such rules, beneficial ownership includes any shares as to which the person has sole or shared voting power or investment power and also any shares that the individual has the right to acquire within 60 days of January 31, 2005 through the exercise of any stock option or other right. The inclusion herein of any shares of Common Stock deemed beneficially owned does not constitute an admission by such shareholder of beneficial ownership of those shares of Common Stock. Shares of Common Stock which an individual or entity has a right to acquire within the 60-day period following January 31, 2005 pursuant to the exercise of options or warrants are deemed to be outstanding for the purpose of computing the percentage ownership of such individual or entity, but are not deemed to be outstanding for the purpose of computing the percentage ownership of any other person or entity shown in the table. Exercisable options include those options that were accelerated by the Company on January 7, 2005.



- (2) Consists of 4,531,110 shares held directly by Mr. Bertucci, 4,546,784 shares held directly by Mr. Bertucci's wife, 450,000 shares held by a limited partnership and 30,106 shares subject to options exercisable within 60 days of January 31, 2005.
- (3) Consists solely of options exercisable within 60 days of January 31, 2005.
- (4) Consists of 24 shares held directly by Mr. Colella and 258,141 shares subject to options exercisable within 60 days of January 31, 2005.
- (5) Consists of 2,058 shares held directly by Mr. Smith and 141,172 shares subject to options exercisable within 60 days of January 31, 2005.
- (6) Consists of 40,000 shares held directly by Mr. Anderson, 11,503 shares held in trust and other accounts and 38,069 shares subject to options exercisable within 60 days of January 31, 2005.
- (7) Consists of 9,374 shares held directly by Mr. Kahl and 28,695 shares subject to options exercisable within 60 days of January 31, 2005.
- (8) Includes 1,065,182 shares held directly by Emerson Electric Co. ("Emerson") and 8,963,389 shares held by a wholly-owned subsidiary of Emerson. Excludes an aggregate of 9,558,000 shares held by Mr. Bertucci, Mrs. Bertucci and a limited partnership (the "Bertucci Shares"), which shares are subject to a Voting Agreement with Emerson which requires the holders of the Bertucci Shares to vote such shares in accordance with such agreement in relation to certain board representation matters.
- (9) Based on information set forth in Schedule 13G filed by The TCW Group with the Commission on February 14, 2005.
- (10) Based on information set forth in Schedule 13G filed by T. Rowe Price Associates, Inc. ("Price Associates") with the Commission on February 11, 2005. Price Associates has supplementally instructed MKS that the reported securities are owned by various individual and institutional investors that Price Associates serves as investment adviser with power to direct investments and/or sole power to vote the securities. Price Associates expressly disclaims beneficial ownership of such securities.
- (11) Includes 9,269,734 outstanding shares beneficially held by such persons and 1,949,070 shares subject to options exercisable within 60 days of January 31, 2005.

To the knowledge of the Company, there are no voting trusts or similar arrangements among any of the foregoing persons or entities with respect to the voting of shares of Common Stock of the Company, except as set forth above.

#### **PROPOSAL ONE ELECTION OF DIRECTORS**

The By-Laws of the Company provide for a Board of Directors that is divided into three classes. The term of the Class I Directors expires at the 2006 Annual Meeting. The term of the Class II Directors expires at the 2007 Annual Meeting, and the term of the Class III Directors expires at the 2005 Annual Meeting. John R. Bertucci and Robert R. Anderson are currently proposed for election to serve as Class III Directors.

Shares represented by all proxies received by the Board of Directors and not so marked as to withhold authority to vote for an individual director will be voted (unless one or more nominees are unable or unwilling to serve) for the election of the nominees named below. The Board of Directors expects that each of the nominees named below will be available for election, but if any of them is not a candidate at the time the election occurs, it is intended that such proxies will be voted for the election of a substitute nominee to be designated by the Board of Directors.

#### **BOARD RECOMMENDATION**

**THE BOARD OF DIRECTORS BELIEVES THAT APPROVAL OF THE ELECTION OF JOHN R. BERTUCCI AND ROBERT R. ANDERSON TO SERVE AS CLASS III DIRECTORS IS IN THE BEST INTERESTS OF MKS AND ITS SHAREHOLDERS AND THEREFORE RECOMMENDS A VOTE "FOR" THIS PROPOSAL.**

## DIRECTORS

Set forth below are the names and ages of each member of the Board of Directors (including those who are nominees for election as Class III Directors) and the positions and offices held, principal occupation and business experience during the past five years, the names of other publicly held companies of which the individual serves as a director and the year of commencement of the term as director of MKS. Information with respect to the number of shares of Common Stock beneficially owned by each director, directly or indirectly, as of January 31, 2005, appears in this proxy statement under the heading "Security Ownership of Certain Beneficial Owners and Management."

<u>Name</u>	<u>Age</u>	<u>Position</u>	<u>Class to Which Director Belongs</u>
*John R. Bertucci	64	Director, Chairman and Chief Executive Officer	III
*Robert R. Anderson(1)(2)	67	Director	III
James G. Berges	57	Director	II
Richard S. Chute(2)	66	Director, Secretary	II
Hans-Jochen Kahl(3)	65	Director	I
Owen W. Robbins(1)	75	Director	II
Louis P. Valente(1)(2)(3)	74	Director	I

(1) Member of Audit Committee

(2) Member of Nominating and Corporate Governance Committee

(3) Member of Compensation Committee

\* Nominee for election at this meeting

Mr. Bertucci has served as a director of MKS since 1974 and has been Chairman of the Board of Directors and Chief Executive Officer since November 1995. Mr. Bertucci served as President of MKS from 1974 to May 1999 and again from November 2001 to April 2004. From 1970 to 1974, he was Vice President and General Manager. Mr. Bertucci has an M.S. in Industrial Administration and a B.S. in Metallurgical Engineering from Carnegie-Mellon University. Mr. Bertucci is a member of the Board of Trustees of Carnegie-Mellon University and a member of the Executive Board of The Massachusetts High Technology Council.

Mr. Anderson has served as a director of MKS since January 2001. Mr. Anderson is a private investor. From October 1998 to October 2000, Mr. Anderson served as Chairman of Yield Dynamics, Inc., a private semiconductor control software company and presently serves as a director. He also served as CEO of Yield Dynamics from October 1998 to April 2000. Mr. Anderson also served as CEO of Silicon Valley Research, Inc., a semiconductor design automation software company, from December 1996 to August 1998 and as Chairman from January 1994 to January 2001. Mr. Anderson currently serves as a director of Trikon Technologies, Inc., a manufacturer of semiconductor process equipment, Aehr Test Systems, Inc., a manufacturer of semiconductor test and burn-in equipment, and also serves as a director of three privately held companies.

Mr. Berges has served as a director of MKS since February 2002. Mr. Berges is currently President and a director of Emerson Electric Co., and is also a director of PPG Industries, Inc.

Mr. Chute has served as a director of MKS since 1974. Mr. Chute has been in private law practice since January 2003 and was a member of the law firm of Hill & Barlow, a Professional Corporation, from 1971 to January 2003. Mr. Chute also serves as a director of three non-profit entities.

Mr. Kahl has served as a director of MKS since January 2001. From June 1994 through September 1996, Mr. Kahl served as a consultant to Ebara, a Japanese manufacturer of industrial water pumps and vacuum process equipment for the semiconductor industry. Mr. Kahl was employed by Leybold AG, formerly Leybold-Heraeus GmbH, a leading international manufacturer of vacuum pumps and other vacuum process

equipment for the semiconductor industry, from July 1983 to March 1992, where he served as a managing director and was primarily responsible for sales, marketing and strategic planning. From September 1995 to November 2000, he was a director of Applied Science and Technology, Inc. (ASTeX) which was acquired by MKS. Since November 1996, he has served as a director of Solid State Management, a privately held manufacturer of high precision measurement tools.

Mr. Robbins has served as a director of MKS since February 1996. Mr. Robbins has been an independent investor since July 1997. Mr. Robbins was Executive Vice President of Teradyne, Inc., a manufacturer of electronic test systems and backplane connection systems used in the electronics and telecommunications industries, from March 1992 to May 1997, and its Chief Financial Officer from February 1980 to May 1997. Mr. Robbins is also a director of two privately held companies.

Mr. Valente has served as a director of MKS since February 1996. Mr. Valente has been Chairman of Palomar Medical Technologies, Inc., a company that designs, manufactures and markets cosmetic lasers, since September 1997. He has been a director of Palomar Medical Technologies, Inc. since February 1997 and was its President and Chief Executive Officer from May 1997 to May 2002. Mr. Valente is also a director of Surgilight, Inc., Medical Information Technology, Inc. and is also a director of one privately held company.

### **Director Compensation**

Directors of MKS are reimbursed for expenses incurred in connection with their attendance at Board of Directors and committee meetings. Directors who are not employees of MKS are paid an annual fee of \$20,000 and a fee of \$2,000 for each Board of Directors meeting they attend. In addition, the Chairman of the Audit Committee is paid \$2,500, and the other members of the Audit Committee are paid \$1,500, for each meeting of the Audit Committee that they attend. The Chairman of each of the Compensation and Nominating and Corporate Governance Committees are paid \$1,500, and the other members of such committees are paid \$750, for each meeting of such committees that they attend. Messrs. Chute, Robbins and Valente have each been granted options under MKS's 1996 Amended and Restated Director Stock Option Plan (under which no further grants will be made), to purchase 8,592 shares of Common Stock at a weighted average exercise price of \$4.81 per share. Each has also been granted options to purchase 58,500 shares of Common Stock at a weighted average exercise price of \$23.11 per share under the Second Amended and Restated 1997 Director Stock Option Plan (the "1997 Director Plan"). Mr. Anderson and Mr. Kahl have each been granted options to purchase 41,250 shares of Common Stock at a weighted average exercise price of \$21.86 per share under the 1997 Director Plan. Mr. Berges has elected not to receive compensation for serving as a director of MKS.

### **Second Amended and Restated 1997 Director Stock Option Plan**

The 1997 Director Plan authorizes the issuance of up to an aggregate of 750,000 shares of Common Stock. The 1997 Director Plan is administered by MKS's Board of Directors. Options are granted under the 1997 Director Plan only to directors of MKS who are not employees of MKS. Under the 1997 Director Plan, non-employee directors receive an option to purchase 20,000 shares of Common Stock upon their initial election to the Board of Directors. Each initial option vests over a three-year period in 12 equal quarterly installments following the date of grant. On the date of each annual meeting of shareholders, options are automatically granted to each eligible director who has been in office for at least six months prior to the date of the annual meeting of shareholders. Each annual option entitles the holder to purchase 12,000 shares of Common Stock. Each annual option will generally become exercisable on the day prior to the first annual meeting of shareholders following the date of grant, or if no such meeting is held within 13 months after the date of grant, on the 13 month anniversary of the date of grant. The exercise price of all options granted under the 1997 Director Plan is equal to the fair market value of the Common Stock on the date of grant. Options granted under the 1997 Director Plan terminate upon the earlier of (i) 10 years after the grant date and (ii) with respect to options granted prior to May 17, 2000, three months after the optionee ceases to be a director of MKS, or, with respect to options granted on or after May 17, 2000, three years after the optionee ceases to be a director of MKS. In the event of a change in control of MKS, the vesting of all options then

outstanding would be accelerated in full and any restrictions on exercising outstanding options would terminate.

The Company's 1996 Amended and Restated Director Stock Option Plan, under which options have been granted to, and may still be exercised by, three non-employee directors of MKS, has been terminated. See "Director Compensation."

### **Committees of the Board of Directors**

The Board of Directors has established three standing committees — Audit, Compensation, and Nominating and Corporate Governance — each of which operates under a charter that has been approved by the Board. Each committee's current charter is posted in the Investor link on the Company's website, [www.mksinstruments.com](http://www.mksinstruments.com), under the heading Corporate Governance.

The Board of Directors has determined that all of the members of the Board, other than Mr. Bertucci, are independent as defined under the rules of the Nasdaq Stock Market, including, in the case of all members of the Audit Committee, the additional independence requirements of Rule 10A-3 under the Securities Exchange Act of 1934, as amended (the "Exchange Act").

#### ***Compensation Committee***

The Compensation Committee for the year 2004 consisted of Messrs. Kahl and Valente. Mr. Berges, who was initially on the Compensation Committee, resigned from the committee on February 4, 2004. The Compensation Committee's responsibilities include:

- determining the CEO's compensation;
- reviewing and approving, or making recommendations to the Board of Directors with respect to, the compensation of the Company's other executive officers;
- annually reviewing and approving the Company's management incentive plan;
- overseeing and administering the Company's equity incentive plans; and
- reviewing and making recommendations to the Board of Directors with respect to director compensation.

The Compensation Committee held three meetings in 2004.

#### ***Audit Committee***

The Audit Committee consists of Messrs. Anderson, Robbins and Valente. The Audit Committee's responsibilities include:

- appointing, approving the fees of, and assessing the independence of, the Company's independent auditors;
- overseeing the work of the Company's independent auditors, including through the receipt and consideration of certain reports from the independent auditors;
- reviewing and discussing the Company's annual and quarterly financial statements and related disclosures with management and the independent auditors;
- monitoring the Company's internal control over financial reporting, disclosure controls and procedures and code of business conduct and ethics;
- overseeing the Company's internal audit function;
- establishing policies regarding hiring employees from the independent auditors and procedures for the receipt and retention of accounting related complaints and concerns;

- meeting independently with the Company's internal auditing staff, independent auditors and management; and
- preparing the Audit Committee report required by Commission rules (which is included on page 13 of this proxy statement).

The Audit Committee held nine meetings in 2004.

#### ***Nominating and Corporate Governance Committee***

The Nominating and Corporate Governance Committee consists of Messrs. Anderson, Chute and Valente. The Nominating and Corporate Governance Committee's responsibilities include:

- identifying individuals qualified to become members of the Board of Directors;
- recommending to the Board of Directors the persons to be nominated for election as directors and to each of the Board's committees; and
- developing and recommending corporate governance principles to the Board of Directors.

The Nominating and Corporate Governance Committee held one meeting in 2004.

The Board of Directors held five meetings in 2004. Each director attended at least 75% of the aggregate of the total number of meetings of the Board of Directors and the total number of meetings of all committees of the Board on which he served. Pursuant to resolutions adopted by the Board of Directors, directors are encouraged to attend annual meetings of shareholders. Messrs. Bertucci, Chute, Robbins and Valente attended the 2004 annual meeting of shareholders.

#### **Audit Committee Financial Expert**

The Board of Directors has determined that each of the three members of the Audit Committee is an "audit committee financial expert" as defined in Item 401(h) of Regulation S-K.

#### **Director Candidates**

The Nominating and Corporate Governance Committee nominated the director nominees for election as Class III directors. The process to be followed by the Nominating and Corporate Governance Committee to identify and evaluate director candidates includes requests to Board members and others for recommendations, meetings from time to time to evaluate biographical information and background material relating to potential candidates and interviews of selected candidates by members of the Committee and the Board of Directors.

In considering whether to recommend any particular candidate for inclusion in the Board of Directors' slate of recommended director nominees, the Nominating and Corporate Governance Committee applies the criteria attached to the Committee's charter. These criteria include the candidate's integrity, business acumen, knowledge of the Company's business and industry, age, experience, diligence, conflicts of interest and the ability to act in the interests of all shareholders. The Committee does not assign specific weights to particular criteria and no particular criterion is a prerequisite for each prospective nominee. The Company believes that the backgrounds and qualifications of its directors, considered as a group, should provide a composite mix of experience, knowledge and abilities that will allow the Board of Directors to fulfill its responsibilities.

Shareholders may recommend individuals to the Nominating and Corporate Governance Committee for consideration as potential director candidates by submitting their names, together with appropriate biographical information and background materials and a statement as to whether the shareholder or group of shareholders making the recommendation has beneficially owned more than 5% of the Company's Common Stock for at least a year as of the date such recommendation is made, to the Nominating and Corporate Governance Committee, in care of Kathleen F. Burke, Esq., Corporate Counsel, MKS Instruments, Inc., 90 Industrial Way, Wilmington, MA 01887. Assuming that appropriate biographical and background material has been provided on a timely basis, the Nominating and Corporate Governance Committee will evaluate

shareholder-recommended candidates by following substantially the same process, and applying the same criteria, as it does in considering other candidates.

Shareholders also have the right under the Company's By-Laws (or, if approved by the shareholders at the Annual Meeting, the Second Restated By-Laws) to directly nominate director candidates, without any action or recommendation on the part of the Nominating and Corporate Governance Committee or the Board of Directors, by following the procedures set forth under the heading "Deadline for Submission of Shareholder Proposals for the 2006 Annual Meeting" below.

### **Communicating with the Independent Directors**

The Board of Directors will give appropriate attention to written communications that are submitted by shareholders, and will respond if and as appropriate.

The Chairman of the Nominating and Corporate Governance Committee, with the assistance of the Company's Corporate Counsel, is primarily responsible for monitoring communications from shareholders and for providing copies or summaries to the other directors as he considers appropriate.

Communications are forwarded to all directors if they relate to important substantive matters and include suggestions or comments that the Chairman of the Nominating and Corporate Governance Committee considers to be important for the directors to know. In general, communications relating to corporate governance and long-term corporate strategy are more likely to be forwarded than communications relating to ordinary business affairs, personal grievances and matters as to which the Company tends to receive repetitive or duplicative communications.

Shareholders who wish to send communications on any topic to the Board of Directors should address such communications to the Board of Directors in care of Kathleen F. Burke, Esq., Corporate Counsel, MKS Instruments, Inc., 90 Industrial Way, Wilmington, MA 01887.

### **COMPENSATION COMMITTEE REPORT ON EXECUTIVE COMPENSATION**

The Company's executive compensation program is administered by the Compensation Committee of the Board of Directors. In 2004, the Compensation Committee (for purposes of this report only, the "Committee") was comprised of two non-employee directors, Messrs. Kahl and Valente. Mr. Berges, who was initially a member of the Committee, resigned from the Committee on February 4, 2004. The Committee is responsible for determining the salaries of, establishing bonus programs for, and granting stock options to, the Company's executive officers.

The Committee believes that the primary objectives of the Company's compensation policies are to attract, retain, motivate, and reward a management team that can effectively implement and execute the Company's strategic business plan and lead the Company in achieving its long-term growth and earnings goals. These compensation policies include an overall management compensation program that: (i) is competitive with management compensation programs at companies of similar size and in a similar industry; (ii) recognizes individual initiative, leadership and achievement; (iii) provides short-term bonus incentives for management to meet the Company's net income performance goals; and (iv) provides long-term incentive compensation in the form of stock options to encourage management to continue to focus on shareholder return.

The Committee's goal is to use compensation policies to closely align the interests of the Company's management with the interests of shareholders so that the Company's management has incentives to achieve short-term performance goals while building long-term value for the Company's shareholders. In establishing base salaries for executive officers, the Committee considers numerous factors such as the executive's responsibilities, the executive's importance to the Company, the executive's performance, historical salary levels of the executive, and the salaries of executives at certain other companies whose business is similar to that of the Company. The Committee will review its compensation policies from time to time in order to

determine the reasonableness of the Company's compensation programs and to take into account factors that are unique to the Company.

The Company has entered into employment agreements with its executive officers and certain other senior officers of the Company. The Committee believes that the salaries and benefits provided to these senior officers reflect appropriate base salaries and benefits as compared to senior officers of other companies of similar size. These agreements provide for termination for cause as well as termination without cause and for certain severance benefits and restrict the officers' ability to compete with the Company.

#### **Bonus Plan**

To further provide incentives for management to continue to improve operating results, the Committee oversees the administration of the Management Incentive Plan ("Bonus Plan"). The amounts to be distributed pursuant to the Bonus Plan are determined by the financial results of the Company. The Committee believes that the Bonus Plan provides significant incentive to the executive officers of the Company to exceed the Company's financial goals.

#### **Long-Term Incentive Compensation**

Long-term incentive compensation, in the form of stock options, allows the executive officers to share in any appreciation in the value of the Company's Common Stock. The Committee believes that stock option participation aligns executive officers' interests with those of the shareholders. In addition, the Committee believes that awarding options to executive officers helps to balance the short-term focus of annual incentive compensation with a longer term view and may help to retain key executive officers. Moreover, because options granted to executive officers generally become exercisable over a four-year period and terminate upon or shortly after the termination of the executive's employment with the Company, stock options serve as a means of retaining these executives.

In January 2005, the Committee accelerated the vesting of unvested options awarded to the Company's employees, including officers, which options had an exercise price of \$23.00 or greater. The closing sale price of MKS stock on the Nasdaq National Market on the date of acceleration was \$16.03. As a result of this action, options to purchase approximately 1.6 million shares became exercisable on January 7, 2005. Under the recently issued Financial Accounting Standards Board Statement No. 123R, "Share-Based Payment" ("FAS 123R"), the Company will be required to apply the expense recognition provisions under FAS 123R beginning July 1, 2005. The Company believes that accelerating the vesting of the identified stock options will reduce the Company's compensation charge in periods subsequent to June 30, 2005.

When establishing stock option grant levels, the Committee considers general corporate performance, the Chief Executive Officer's recommendations, level of seniority and experience, the dilutive impact of the options, previous grants of stock options, vesting schedules of outstanding options and the current stock price.

It is the policy of the Company to make an initial stock option grant to all executive officers at the time they commence employment consistent with the number of options granted to executive officers in the industry at similar levels of seniority. In addition, the Committee may also make grants throughout the year. In making such grants, the Committee considers individual contributions to the Company's financial, operational and strategic objectives.

Senior management also participates in Company-wide employee benefit plans, including the Company's 401(k) Plan. Benefits under these plans are not dependent upon individual performance.

In addition, in 2004, the Committee and the Board of Directors approved supplemental retirement benefits for certain executive officers and other officers of the Company. The Committee believes that such benefits will aid in the retention of these individuals until their retirement.

## Compensation of Chief Executive Officer

Mr. Bertucci's compensation was based upon a careful analysis of other comparable companies' Chief Executive Officers' compensation and Mr. Bertucci's efforts and success in improving the Company's operating results, establishing strategic goals and objectives for long-term growth of the Company, and advancing the Company in obtaining its strategic goals and objectives.

### Section 162(m)

Section 162(m) of the Internal Revenue Code of 1986, as amended (the "Code"), generally disallows a tax deduction to public companies for certain compensation in excess of \$1.0 million paid to such company's chief executive officer or any of the four other most highly compensated executive officers. Certain compensation, including qualified performance-based compensation, will not be subject to the deduction limit if certain requirements are met.

The Committee reviews the potential effect of Section 162(m) periodically and generally seeks to structure the long-term incentive compensation granted to its executive officers through option issuances under its stock option plans in a manner that is intended to avoid disallowance of deductions under Section 162(m). Nevertheless, there can be no assurances that compensation attributable to awards granted under our stock option plans will be treated as qualified performance-based compensation under Section 162(m). Because the Company's Bonus Plan is not operated in a manner designed to qualify as performance-based compensation under Section 162(m), it is possible that a portion of any bonus payable to Mr. Bertucci and certain other executives under the Bonus Plan will not be deductible for federal income tax purposes. The Committee reserves the right to use its judgment to authorize compensation payments which may be in excess of the Section 162(m) limit when the Committee believes such payments are appropriate, after taking into consideration changing business conditions or the officer's performance, and are in the best interests of the shareholders.

*2004 Compensation Committee*  
Hans-Jochen Kahl, Chairman  
Louis P. Valente

### Compensation Committee Interlocks and Insider Participation

In 2004, the Compensation Committee comprised Messrs. Kahl and Valente, and until February 4, 2004, Mr. Berges. Messrs. Berges, Kahl, and Valente were not, at any time, officers or employees of MKS or any subsidiary of MKS. None of them had any relationship with MKS requiring disclosure under Item 404 of Regulation S-K under the Exchange Act, with the exception of Mr. Berges, which is described below. No executive officer of MKS serves, or has served, as a member of the board of directors or compensation committee (or other committee serving an equivalent function) of any other entity which has one or more executive officers serving as a member of MKS's Board of Directors or Compensation Committee.

Mr. Berges, who resigned from the Compensation Committee on February 4, 2004, is President and a director of Emerson Electric Co. ("Emerson"). During 2004, MKS purchased materials and services from Emerson and its subsidiaries totaling approximately \$1,854,000. In addition, in accordance with the terms of a Shareholder's Agreement between MKS and Emerson, MKS paid the expenses of Emerson relating to the registration of shares in connection with a public offering of Common Stock that closed in January 2004. Such expenses were \$176,000.



## REPORT OF THE AUDIT COMMITTEE OF THE BOARD OF DIRECTORS

The Audit Committee of the Company's Board of Directors is currently composed of three members and acts under a written charter adopted and approved on February 4, 2004. The members of the Audit Committee are independent directors, as defined by its charter and the rules of the Nasdaq Stock Market, and possess the financial sophistication required by such charter and rules. The Audit Committee held nine meetings during the fiscal year ended December 31, 2004.

Management is responsible for the Company's internal controls and the financial reporting process. The Company's independent auditors, PwC, are responsible for performing an independent audit of the Company's financial statements and the Company's internal control over financial reporting in accordance with auditing standards generally accepted in the United States, and issue a report on those financial statements. The Audit Committee is responsible for monitoring and overseeing these processes. As appropriate, the Audit Committee reviews and evaluates, and discusses with the Company's management, internal accounting, financial and auditing personnel and the independent auditors, the following:

- the plan for, and the independent auditors' report on, audits of the Company's financial statements;
- the Company's financial disclosure documents, including all financial statements and reports filed with the Commission or sent to shareholders;
- management's selection, application and disclosure of critical accounting policies;
- major changes in the Company's significant accounting practices, principles, controls or methodologies;
- significant developments or changes in accounting rules applicable to the Company; and
- the adequacy of the Company's internal controls and accounting, financial and auditing personnel.

The Audit Committee reviewed the Company's audited financial statements for the fiscal year ended December 31, 2004, and discussed these financial statements with the Company's management. Management represented to the Audit Committee that the Company's financial statements had been prepared in accordance with accounting principles generally accepted in the United States. The Audit Committee also reviewed and discussed the audited financial statements and the matters required by Statement on Auditing Standards No. 61 "Communication with Audit Committees," as amended (SAS 61), with PwC, the Company's independent auditors. SAS 61 requires the Company's independent auditors to discuss with the Company's Audit Committee, among other things, the following:

- methods to account for significant unusual transactions;
- the effect of significant accounting policies in controversial or emerging areas for which there is a lack of authoritative guidance or consensus;
- the process used by management in formulating particularly sensitive accounting estimates and the basis for the auditors' conclusions regarding the reasonableness of those estimates; and
- disagreements with management over the application of accounting principles, the basis for management's accounting estimates and the disclosures in the financial statements.

The Company's independent auditors also provided the Audit Committee with the written disclosures and the letter required by Independence Standards Board Standard No. 1 "Independence Discussions with Audit Committees." Independence Standards Board Standard No. 1 requires auditors annually to disclose in writing all relationships that in the auditor's professional opinion may reasonably be thought to bear on independence, confirm their perceived independence and engage in a discussion of independence. In addition, the Audit Committee discussed with the independent auditors their independence from the Company. The Audit Committee also considered whether the independent auditors' provision of the other, non-audit related, services to the Company, which are referred to below, is compatible with maintaining such auditors' independence.

Based on its discussions with management and the independent auditors, and its review of the representations and information provided by management and the independent auditors, the Audit Committee recommended to the Company's Board of Directors that the audited financial statements of the Company be included in the Company's Annual Report on Form 10-K for the year ended December 31, 2004.

By the Audit Committee of the Board of Directors of MKS Instruments, Inc.

Robert R. Anderson, Chairman  
Owen W. Robbins  
Louis P. Valente

## EXECUTIVE OFFICERS

The following is a brief summary of the background of each executive officer of MKS, other than Mr. Bertucci, whose background is described under the heading "Directors" above:

*Leo Berlinghieri, President and Chief Operating Officer, Age 51*

Mr. Berlinghieri has served as President and Chief Operating Officer since April 2004. He previously served as Vice President and Chief Operating Officer of MKS from July 2003 to April 2004. From November 1995 to July 2003, he served as Vice President, Global Sales and Service. From 1980 to November 1995, he served in various management positions of MKS, including Manufacturing Manager, Production and Inventory Control Manager, and Director of Customer Support Operations.

*Gerald G. Colella, Vice President, Global Business and Service Operations, Age 48*

Mr. Colella has served as Vice President, Global Business and Service Operations since October 1997. From March 1996 to October 1997, he served as Director of Materials Planning and Logistics, and from February 1994 to March 1996, he served as Materials Planning and Logistics Manager. Mr. Colella joined MKS in April 1983 as Purchase Contract Administrator. He holds an M.B.A. from Southern New Hampshire University, Manchester, New Hampshire, as well as a B.A. in Secondary Education from the University of Lowell, Lowell, Massachusetts.

*Ron Hadar, Vice President and General Manager, CIT Products, Age 43*

Mr. Hadar has served as Vice President and General Manager, CIT Products since September 2004. He served as General Manager of Tenta Products, which later became CIT Products, from April 2002 through September 2004. In 1999, Mr. Hadar co-founded and became CEO of Tenta Technology, Ltd., which MKS acquired in March 2002. Mr. Hadar was employed by Applied Materials Israel from 1993 through 1998, most recently as U.S. Operations Manager of the electronic department. Mr. Hadar has a Project Administration certificate from the Recanati School of Business Administration of Tel Aviv University, an Associate Engineer degree from the Technical College of Tel Aviv University and a Communication Systems Technician certificate from the Israeli Air Force Technical College.

*Robert L. Klimm, Vice President and General Manager, Power and Reactive Gas Products Group, Age 54*

Mr. Klimm has served as Vice President and General Manager, Power and Reactive Gas Products Group since September 2002. Prior to this position, he served as Vice President and General Manager of the ASTeX Products Group from August 2001 to September 2002, and of the Materials Delivery and Analysis Products Group from December 1999 to August 2001. Before joining MKS, Mr. Klimm was Vice President and General Manager of the Factory Automation Division of PRI Automation from 1997 to September 1999. Mr. Klimm has an M.B.A. from the Sloan School at MIT, an M.A. in electrical engineering from Northeastern University and a B.S. in electrical engineering from Lehigh University.

*John A. Smith, Vice President and Chief Technology Officer, Age 54*

Dr. Smith has served as Vice President and Chief Technology Officer since January 2005. Prior to that time, he served as Vice President of Technology and General Manager of the Instruments and Control Systems Product Group, which comprises Pressure Measurement and Control, Materials Delivery, Gas Composition and Analysis, and Control and Information Technology products from December 2002 to January 2005. Dr. Smith also served as Vice President and General Manager of Materials Delivery Products and Advanced Process Control, from February 2002 to December 2002. From July 1994 until February 2002, he was Managing Director of MKS Instruments, U.K. Ltd. Dr. Smith has a Ph.D. in electronic engineering from the University of Manchester, U.K.

*William D. Stewart, Vice President and General Manager, Vacuum Products Group, Age 60*

Mr. Stewart has served as Vice President and General Manager, Vacuum Products Group since November 1997. From October 1986 to November 1997, he was President of HPS Products, which MKS acquired in 1986. Mr. Stewart co-founded HPS in 1976. Mr. Stewart has an M.B.A. from Northwestern

University and a B.S. in Business Administration from the University of Colorado. Mr. Stewart also serves on the Board of Directors of the Janus Fund.

*Ronald C. Weigner, Vice President and Chief Financial Officer, Age 59*

Mr. Weigner has served as Vice President and Chief Financial Officer of MKS since November 1995. From September 1993 until November 1995, he served as Vice President and Corporate Controller, and from 1980 to 1993, he served as Corporate Controller. Mr. Weigner is a certified public accountant and has a B.S. in Business Administration from Boston University.

Executive officers of MKS are elected by the Board of Directors on an annual basis and serve until their successors are duly elected and qualified. There are no family relationships among any of the executive officers or directors of MKS.

### Executive Compensation

The following table sets forth information with respect to the compensation of MKS's Chief Executive Officer and each of the four other most highly compensated executive officers (collectively, the "Named Executive Officers") for the years ended December 31, 2004, 2003 and 2002.

#### SUMMARY COMPENSATION TABLE

Name and Principal Position	Year	Other Annual Compensation			Long-Term Compensation Awards	All Other Compensation(1)
		Salary	Bonus	Other Annual Compensation	Securities Underlying Options(#)	
John R. Bertucci	2004	\$ 443,154	\$ 351,373	—	—	\$ 6,150
Chairman and Chief Executive Officer	2003	\$ 391,430	\$ 25,438	—	965	\$ 6,000
	2002	\$ 371,441	—	—	—	—
Leo Berlinghieri	2004	\$ 336,023	\$ 216,220	—	65,000	—
President and Chief Operating Officer	2003	\$ 233,599	\$ 8,189	—	85,857	—
	2002	\$ 186,351	—	—	60,466	—
Ronald C. Weigner	2004	\$ 229,794	\$ 99,960	—	36,000	\$ 6,150
Vice President and Chief Financial Officer	2003	\$ 202,846	\$ 7,080	—	24,895	\$ 6,000
	2002	\$ 196,475	—	—	60,503	\$ 5,500
Gerald G. Colella	2004	\$ 244,289	\$ 132,445	—	42,000	\$ 6,150
Vice President, Global Business and Service Operations	2003	\$ 193,132	\$ 6,797	—	35,107	\$ 6,000
	2002	\$ 172,218	—	—	—	\$ 5,500
John A. Smith	2004	\$ 244,325	\$ 132,462	—	41,000	\$ 5,033
Vice President and Chief Technology Officer	2003	\$ 196,248	\$ 6,904	—	24,836	\$ 4,450
	2002	\$ 183,987	—	—	30,461	\$ 1,750

(1) Represents amounts paid into a 401(k) plan. Other compensation in the form of perquisites and other personal benefits has been omitted in those instances where such perquisites and other personal benefits constituted less than the lesser of \$50,000 or 10 percent of the total salary and bonus for the respective Named Executive Officer for such year.

## Stock Option Grants

### Option Grants in Fiscal Year 2004

Name	Individual Grants			Expiration Date(3)	Potential Realizable Value at Assumed Annual Rates of Stock Price Appreciation for Option Term(4)	
	Number of Securities Underlying Options Granted(1)	% of Total Options Granted to Employees in Fiscal Year(2)	Exercise of Base Price (\$/Sh)		5%	10%
John R. Bertucci	—	—	\$ —	\$ —	\$ —	
Leo Berlinghieri	15,000		\$ 29.93	1/5/2014	\$ 282,342	\$ 715,511
	50,000	3.00%	\$ 14.72	7/30/2014	\$ 462,866	\$ 1,172,994
Ronald C. Weigner	6,000		\$ 29.93	1/5/2014	\$ 112,937	\$ 286,204
	30,000	1.66%	\$ 14.72	7/30/2014	\$ 277,720	\$ 703,797
Gerald G. Colella	7,000		\$ 29.93	1/5/2014	\$ 131,760	\$ 333,905
	35,000	1.94%	\$ 14.72	7/30/2014	\$ 324,007	\$ 821,096
John A. Smith	6,000		\$ 29.93	1/5/2014	\$ 112,937	\$ 286,204
	35,000	1.89%	\$ 14.72	7/30/2014	\$ 324,007	\$ 821,096

- Options will become exercisable as follows: 25% of the shares become exercisable on the first anniversary of the date of issue. An additional 6.25% of the initial grant of options vests on each successive quarter.
- In the fiscal year ended December 31, 2004, options to purchase a total of 2,167,830 shares of Common Stock were granted to employees of MKS, including officers.
- The options are subject to earlier termination upon certain events related to termination of employment.
- The dollar gains under these columns result from calculations discussing hypothetical growth rates as set by the Commission and are not intended to forecast future price appreciation of the Common Stock.

### Aggregated Option Exercises in Last Fiscal Year and Fiscal Year-End Option Values

Name	Shares Acquired on Exercise(#)	Value Realized	Number of Securities Underlying Unexercised Options at Fiscal Year End		Value of Unexercised In-the-Money Options at Fiscal Year End(1)	
			Exercisable	Unexercisable	Exercisable	Unexercisable
			John R. Bertucci	4,601	\$ 42,743	30,106
Leo Berlinghieri	5,000	\$ 93,942	326,328	151,875	\$ 1,357,153	\$ 251,644
Ronald C. Weigner	9,000	\$ 121,004	386,698	80,250	\$ 2,438,159	\$ 142,388
Gerald G. Colella	9,000	\$ 109,763	216,641	93,000	\$ 128,336	\$ 163,150
John A. Smith	—	—	101,078	88,219	\$ 141,861	\$ 159,710

- Total value of “in-the-money” unexercised options is based on the difference between the last sales price of the Company’s Common Stock on the Nasdaq Stock Market on December 31, 2004 (\$18.55 per share) and the exercise price of “in-the-money” options, multiplied by the number of shares subject to such options.

### Retirement Benefits

MKS has provided supplemental retirement benefits to certain officers, including Messrs. Berlinghieri, Weigner and Colella. Benefits become fully vested when the officer (i) has 25 years of service with MKS, and (ii) retires at Normal Retirement Age (defined below), with partial vesting at specified ages prior to Normal Retirement Age, as indicated below. When fully vested, the benefits provide for annual payments equal to 50% of the employee’s final average compensation (defined below) for life, with 50% of such amount payable to his

spouse for life after the employee's death, or a lump sum payment of an aggregate amount calculated in accordance with actuarial tables. Final annual compensation is equal to the average of officer's three highest years of compensation (salary plus bonus) during the 10 years prior to the officer's retirement (or other qualifying termination). The benefits listed above are not subject to any deduction for social security or other offset amounts.

The above-named officers have been credited with the following years of service and have the following Normal Retirement Age pursuant to the supplemental retirement benefits:

	<u>Years of Service Credited</u> <u>(as of 12/31/04)</u>	<u>Normal Retirement Age</u> <u>(fully vested)</u>
Leo Berlinghieri	24	62(1)
Ronald C. Weigner	24	65(2)
Gerald G. Colella	21	62(1)

- (1) When fully vested, amount payable to each of Messrs. Berlinghieri and Colella is equal to 50% of average of his three highest years of compensation (salary plus bonus) during the 10 years prior to his retirement (or other qualifying termination). At age 61, this benefit becomes 90% vested and at age 60, this benefit becomes 80% vested.
- (2) When fully vested, amount payable to Mr. Weigner is equal to 50% of average of his three highest years of compensation (salary plus bonus) during the 10 years prior to his retirement (or other qualifying termination). At age 64, this benefit becomes 90% vested; at age 63, this benefit becomes 80% vested, at age 62, this benefit becomes 60% vested; at age 61, this benefit becomes 40% vested; and at age 60, this benefit becomes 20% vested.

In addition, the Company provides Mr. Smith a retirement benefit, as described below under "Employment Agreements."

#### **Certain Relationships and Related Transactions**

Mr. Chute, a director of MKS and MKS's secretary, provides legal services to MKS. In 2004, MKS paid him a retainer of \$60,000 for these services.

Mr. Stewart, Vice President and General Manager of the Vacuum Products Group, is the general partner of Aspen Industrial Park Partnership, LLLP ("Aspen"). MKS leases from Aspen certain facilities occupied by MKS's Vacuum Products Group in Boulder, Colorado. MKS paid Aspen \$1,111,000 in 2004 to lease such facilities.

Mr. Berges, a director of MKS, is the president and a director of Emerson. Emerson is the beneficial owner of approximately 19% of the outstanding shares of Common Stock. During 2004, MKS purchased materials and administrative services from Emerson and its subsidiaries totaling approximately \$1,854,000. In addition, in accordance with the terms of a Shareholder's Agreement between MKS and Emerson, MKS paid the expenses of Emerson relating to the registration of shares in connection with a public offering of Common Stock that closed in January 2004. Such expenses were \$176,000.

Mr. Bertucci, the Chairman and CEO and a director of the Company holds a 50% interest in a partnership that leases space to the Company in Santa Clara, California. In 2004, MKS paid the partnership \$88,000 for lease payments.

## Equity Compensation Plan Information

The following table provides information about the securities authorized for issuance under MKS' equity compensation plans as of December 31, 2004:

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights(1)	Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column(a))
	(a)	(b)	(c)
Equity compensation plans approved by security holders	9,798,568	\$ 20.13	4,224,365(2)(3)
Equity compensation plans not approved by security holders	—	—	—
<b>Total</b>	<b>9,798,568</b>	<b>\$ 20.13</b>	<b>4,224,365(2)(3)</b>

- (1) Excludes an aggregate of 225,149 shares issuable upon the exercise of outstanding options assumed by the Company in connection with an acquisition. The weighted average exercise price of the excluded options is \$25.24.
- (2) Securities available for future issuance under the 2004 Stock Incentive Plan and Second Restated 1995 Stock Option Plan increase on January 1 of each year by 5% of the issued and outstanding shares as of December 31 of the prior year up to the amount authorized by the shareholders (which maximum was reached on January 1, 2004 with respect to the Second Restated 1995 Stock Option Plan).
- (3) Includes 705,612 shares issuable under the Company's Second Restated 1999 Employee Stock Purchase Plan and 163,389 shares issuable under the Company's Restated International Employee Stock Purchase Plan as of December 31, 2004.

## Employment Agreements

MKS has entered into employment agreements with each of Messrs. Berlinghieri, Weigner, Colella and Smith. The terms of such employment agreements are included in the summary below.

Each agreement sets the base salary for each employee which is reviewed annually. In addition to a base salary, each employee is entitled, under MKS's Management Incentive Program, to a bonus equal to a percentage of his base salary if MKS attains specified corporate earnings per share during the year. Each employee is also entitled to standard benefits including:

- participation in a profit sharing and retirement savings plan
- vacation days
- life insurance
- medical/dental insurance

The remaining provisions of each agreement are also substantially the same.

The term of employment for each agreement is month to month with termination:

- upon the death of the employee
- at the election of MKS if the employee fails or refuses to perform his duties
- at the election of MKS if the employee commits any acts not in MKS's best interest

Payment by MKS upon termination depends on how employment is terminated:

- if employment is terminated by death, MKS must pay the employee's estate the compensation owed to him at the end of the month of his death
- if employment is terminated at the election of MKS because the employee fails or refuses to perform his duties, MKS must pay the employee through the last day of actual employment

Each of the agreements contains non-competition provisions during the term of employment and for the period of one year after termination of employment. Under these provisions, Messrs. Berlinghieri, Weigner, Colella and Smith may not:

- engage in any competitive business or activity
- for the 12 months subsequent to termination, work for, employ, become a partner with, or cause to be employed, any employee, officer or agent of MKS
- for the 12 months subsequent to termination, give, sell or lease any competitive services or goods to any customer of MKS
- have any financial interest in or be a director, officer, shareholder, partner, employee or consultant to any competitor of MKS

The agreements for each of Messrs. Berlinghieri, Weigner and Colella provide for supplemental retirement benefits. The benefits:

- vest upon the employee reaching (i) specified ages and (ii) 25 years of service with the Company, in each case while employed with the Company, or upon the employee's earlier death, disability, termination without cause (as defined in the agreement) or a qualifying termination in connection with a change in control (as defined in the agreement)
- are forfeited in the event of termination for cause
- provide for, upon retirement in accordance with the terms of the plan, annual payments equal to 50% of the employee's final average pay (as defined in the agreement) for life, with 50% of such amount payable to his spouse for life after the employee's death, or a lump sum payment of such aggregate amount, in accordance with actuarial tables

Mr. Smith's agreement provides for supplemental retirement benefits. The benefits:

- vest upon his reaching specified ages while employed with the Company, or upon his earlier death, disability, termination without cause (as defined in the agreement) or a qualifying termination in connection with a change in control (as defined in the agreement)
- are forfeited in the event of termination for cause or upon Mr. Smith's voluntary termination for any reason other than retirement
- provide for a payment to Mr. Smith, upon his retirement in accordance with the terms of his agreement, of an amount equal to the aggregate of 15% of Mr. Smith's annual compensation during the period beginning 2004 until termination of employment, as if such amount were invested in investment instruments previously specified by Mr. Smith
- provide that the Company may make additional discretionary contributions to Mr. Smith's retirement plan, and Mr. Smith may contribute up to 25% of his current salary and up to 100% of his bonus to the retirement plan



## CODE OF ETHICS

We have adopted a written code of business conduct and ethics that applies to all directors, officers and employees of MKS (including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions), which is posted in the Investors link on the Company's website, [www.mksinstruments.com](http://www.mksinstruments.com), under the heading Corporate Governance. We intend to disclose any amendments to, or waivers from, our code of business conduct and ethics on our website.

### SECTION 16(a) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE

Section 16(a) of the Exchange Act ("Section 16(a)") requires executive officers, directors, and persons who beneficially own more than ten percent (10%) of the Company's stock to file initial reports of ownership on Form 3 and reports of changes in ownership on Form 4 with the Commission and any national securities exchange on which the Company's securities are registered. Executive officers, directors and greater than ten percent (10%) beneficial owners are required by the Commission's regulations to furnish the Company with copies of all Section 16(a) forms they file.

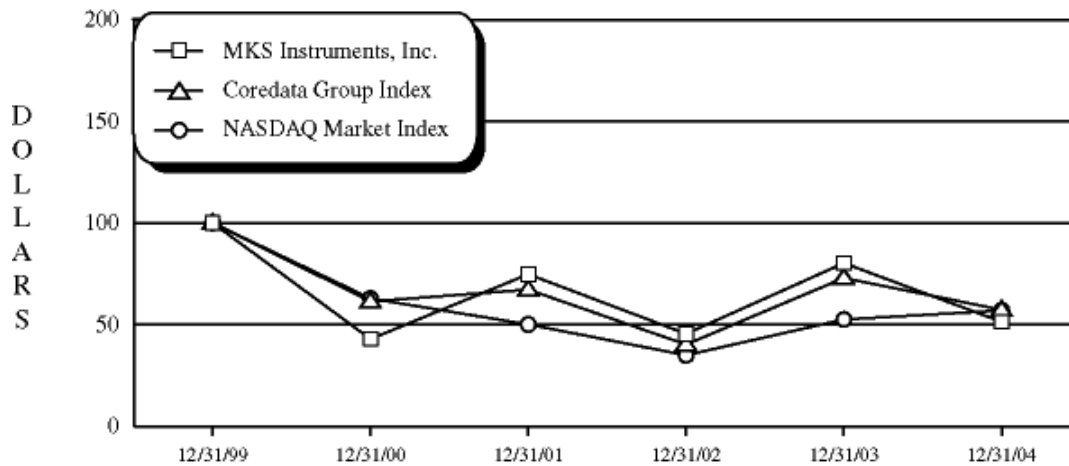
Based solely on a review of the copies of such forms furnished to the Company and written representations from the executive officers and directors pursuant to Item 405 of Regulation S-K, the Company believes that all filing requirements applicable to its officers, directors and greater than ten percent (10%) shareholders were complied with. The Company believes that all other of its executive officers, directors and greater than ten percent (10%) beneficial owners complied with all applicable Section 16(a) filing requirements.

### COMPARATIVE STOCK PERFORMANCE

The following graph compares the cumulative total shareholder return (assuming reinvestment of dividends) from investing \$100 on December 31, 1999, and plotted at the last trading day of each of the fiscal years ended December 31, 2000, 2001, 2002, 2003 and 2004, in each of (i) the Company's Common Stock; (ii) a Peer Group Index of semiconductor equipment/material manufacturers (the "Coredata Group Index")(which index was formerly known as the MG Group Index), compiled by CoreData, Inc. ("CoreData"); and (iii) the Nasdaq Market Index of companies (the "Nasdaq Market Index"). The graph was compiled by CoreData. The stock price performance on the graph below is not necessarily indicative of future price performance. The Company's Common Stock is listed on the Nasdaq National Market under the ticker symbol "MKSI."

Performance Graph

COMPARISON OF CUMULATIVE TOTAL RETURN  
OF ONE OR MORE COMPANIES, PEER GROUPS,  
INDUSTRY INDEXES AND/OR BROAD MARKETS



ASSUMES \$100 INVESTED ON DECEMBER 31, 1999  
ASSUMES DIVIDEND REINVESTED  
FISCAL YEAR ENDING DECEMBER 31, 2004

	2000	2001	2002	2003	2004
MKS Instruments, Inc.	\$ 42.91	\$ 74.82	\$ 45.48	\$ 80.28	\$ 51.35
Coredata Group Index	\$ 61.41	\$ 67.24	\$ 40.22	\$ 72.98	\$ 57.28
NASDAQ Market Index	\$ 62.85	\$ 50.10	\$ 34.95	\$ 52.55	\$ 56.97

PROPOSAL TWO

APPROVAL OF THE COMPANY'S SECOND RESTATED BY-LAWS

On February 7, 2005, the Board of Directors approved, subject to shareholder approval, the adoption of the Company's Second Restated By-Laws, primarily to reflect various provisions of the Massachusetts Business Corporation Act, Chapter 156D, which became effective on July 1, 2004. If approved by the shareholders, the proposed Second Restated By-Laws will replace the Company's current By-Laws. The Second Restated By-Laws are set forth in Appendix A to the electronic copy of this proxy statement filed with the Commission and may be accessed from the Commission's home page ([www.sec.gov](http://www.sec.gov)). Significant differences between the proposed Second Restated By-Laws and the current By-Laws are:

- *Shareholder voting at meetings.* Under the current By-Laws, shareholder action at meetings requires affirmative votes outnumbering the combined total of negative votes and abstentions. Under the proposed Second Restated By-Laws, affirmative votes must outnumber negative votes.
- *Proxy validity.* The current By-Laws require that a proxy must be dated not more than six months before the meeting named in it in order to be valid. The proposed Second Restated By-Laws extend the period of validity to eleven months.
- *Vacancies in the Board of Directors.* The current By-Laws permit the shareholders to fill vacancies in the Board of Directors and to decrease the number of directors to eliminate vacancies. Under the

proposed Second Restated By-Laws, only the Board of Directors may fill vacancies or change the number of directors.

- *Amendment of By-Laws.* The provisions of the current By-Laws relating to removal of directors may be amended only by vote of the shareholders. The proposed Second Restated By-Laws would allow the Board of Directors to amend provisions relating to removal of directors without shareholder approval.
- *Record date.* The current By-Laws allow the Board of Directors to fix a record date not more than sixty days before events for which a record date may be fixed. The proposed Second Restated By-Laws allow the Board of Directors to fix a record date not more than seventy days before such events.
- *Electronic communications.* The proposed Second Restated By-Laws allow electronic communications with directors and shareholders.

**THE BOARD OF DIRECTORS BELIEVES THAT THE PROPOSAL TO APPROVE THE ADOPTION OF THE SECOND RESTATED BY-LAWS IS IN THE BEST INTERESTS OF MKS AND ITS SHAREHOLDERS AND THEREFORE RECOMMENDS A VOTE “FOR” THIS PROPOSAL.**

### **PROPOSAL THREE**

#### **RATIFICATION OF APPOINTMENT OF INDEPENDENT AUDITORS**

On February 7, 2005, the Audit Committee appointed PwC as the Company’s independent auditors for the fiscal year of the Company ending December 31, 2005. PwC was the Company’s independent auditors for the fiscal year ended December 31, 2004.

Representatives of PwC are expected to be present at the Annual Meeting and will have the opportunity to make a statement if they so desire and will be available to respond to appropriate questions from shareholders. In the event that the ratification of the appointment of PwC as the independent auditors for the Company is not obtained at the Annual Meeting, the Board of Directors will reconsider its appointment.

**THE BOARD OF DIRECTORS BELIEVES THAT THE PROPOSAL TO RATIFY THE APPOINTMENT OF PRICEWATERHOUSECOOPERS LLP AS INDEPENDENT AUDITORS OF THE COMPANY FOR THE FISCAL YEAR ENDING DECEMBER 31, 2005 IS IN THE BEST INTERESTS OF MKS AND ITS SHAREHOLDERS AND THEREFORE RECOMMENDS A VOTE “FOR” THIS PROPOSAL.**

### **OTHER MATTERS**

The Board of Directors does not know of any other matters which may come before the meeting. However, if any other matters are properly presented to the meeting, it is the intention of the persons named in the accompanying proxy to vote, or otherwise act, in accordance with their judgment on such matters.

All costs of solicitation of proxies will be borne by the Company. In addition to solicitations by mail, the Company’s directors, officers and regular employees, without additional remuneration, may solicit proxies by telephone, telegraph and personal interviews and the Company reserves the right to retain outside agencies for the purpose of soliciting proxies. Brokers, custodians and fiduciaries will be requested to forward proxy soliciting material to the owners of stock held in their names, and the Company will reimburse them for their reasonable out-of-pocket expenses incurred in connection with the distribution of proxy materials.

## INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

For the years ended December 31, 2004 and 2003, the Company was billed by its independent auditors, PwC, for services in the following categories:

	<u>2004</u>	<u>2003</u>
Audit Fees	\$ 2,309,000	\$ 815,000
Audit-Related Fees	67,000	118,000
Tax Fees	225,000	645,000
All Other Fees	—	—
Total	<u>\$ 2,601,000</u>	<u>\$ 1,578,000</u>

Audit Fees for the year ended December 31, 2004 were for professional services provided for the audit of our consolidated financial statements and of our internal control over financial reporting, statutory and subsidiary audits, consents and assistance with review of documents filed with the Commission. Audit Fees for the year ended December 31, 2003 were for professional services provided for the audit of our consolidated financial statements, statutory and subsidiary audits, consents and assistance with review of documents filed with the Commission.

Audit-Related Fees for the year ended December 31, 2004 were for advice related to accounting and reporting standards. Audit-Related Fees for the year ended December 31, 2003 were for advice related to accounting and reporting standards and services related to employee benefit plan audits.

Tax Fees for each of the years ended December 31, 2004 and 2003 were for services related to tax compliance, including the preparation of tax returns and claims for refund; and tax planning and tax advice, including assistance with acquisitions, foreign sales and foreign subsidiaries.

None of the audit-related, tax or other fees in 2004 or 2003 were provided under the de minimis exception to the audit committee pre-approval requirements.

### ***Pre-Approval Policy and Procedures***

The Audit Committee has adopted policies and procedures relating to the approval of all audit and non-audit services that are to be performed by the Company's independent auditors. This policy generally provides that the Company will not engage its independent auditors to provide audit or non-audit services unless the service is specifically approved in advance by the Audit Committee or the engagement is entered into pursuant to one of the pre-approval procedures described below.

From time to time, the Audit Committee may pre-approve specified types of services that are expected to be provided to the Company by its independent auditors during the next 12 months. Any such pre-approval is detailed as to the particular service or type of service to be provided and is also generally subject to a maximum dollar amount.

The Audit Committee has also delegated to the chairman of the Audit Committee the authority to approve any audit or non-audit services to be provided to the Company by its independent auditors. Any approval of services by the Chairman of the Audit Committee pursuant to this delegated authority is reported on at the next meeting of the Audit Committee.

The Audit Committee has considered and determined that the provision of the non-audit services noted in the foregoing table is compatible with maintaining PwC's independence.

**DEADLINE FOR SUBMISSION OF SHAREHOLDER PROPOSALS  
FOR THE 2006 ANNUAL MEETING**

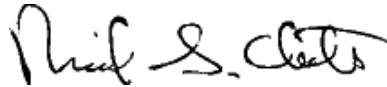
Proposals of shareholders intended to be presented at the 2006 Annual Meeting of Shareholders must be received by the Company at its principal office in Wilmington, Massachusetts not later than November 30, 2005, for inclusion in the proxy statement for that meeting.

In addition, MKS's By-Laws (or, if approved by the shareholders at the Annual Meeting, MKS's Second Restated By-Laws) require that MKS be given advance notice of matters that shareholders wish to present for action at an Annual Meeting of shareholders (other than matters included in MKS' proxy statement in accordance with Rule 14a-8 of the Exchange Act). The required written notice must be delivered to the Secretary of MKS at the principal offices of MKS at least 60 days prior to the Annual Meeting, but no more than 90 days prior to such meeting. However, if less than 40 days notice of the Annual Meeting is provided to the shareholders, the written notice of the shareholder must be received by the Secretary of MKS no later than 10 days after the notice of the Annual Meeting was mailed or publicly disclosed. The advance notice provisions of MKS's By-Laws (or, if approved by the shareholders at the Annual Meeting, MKS's Second Restated By-Laws) contain the requirements of the written notice of shareholders and supersede the notice requirement contained in Rule 14a-4(c)(1) under the Exchange Act.

**IMPORTANT NOTICE REGARDING DELIVERY OF SECURITY HOLDER DOCUMENTS**

Some banks, brokers and other nominee record holders are already "householding" proxy statements and annual reports. This means that only one copy of our proxy statement or annual report may have been sent to multiple shareholders in your household. We will promptly deliver a separate copy of either document to you if you call or write us at the following address or phone number: **MKS Instruments, Inc., 90 Industrial Way, Wilmington, Massachusetts 01887, (978) 284-4000, Attn: Investor Relations**. If you want to receive separate copies of the annual report and proxy statement in the future, or if you are receiving multiple copies and would like to receive only one copy for your household, you should contact your bank, broker, or other nominee record holder, or you may contact us at the above address and phone number.

By Order of the Board of Directors



Richard S. Chute  
Secretary

March 23, 2005

**THE BOARD OF DIRECTORS ENCOURAGES SHAREHOLDERS TO ATTEND THE MEETING. WHETHER OR NOT YOU PLAN TO ATTEND, YOU ARE URGED TO COMPLETE, DATE, SIGN AND RETURN THE ENCLOSED PROXY IN THE ACCOMPANYING ENVELOPE. A PROMPT RESPONSE WILL GREATLY FACILITATE ARRANGEMENTS FOR THE MEETING AND YOUR COOPERATION WILL BE APPRECIATED. SHAREHOLDERS WHO ATTEND THIS MEETING MAY VOTE THEIR STOCK PERSONALLY EVEN THOUGH THEY HAVE SENT IN THEIR PROXIES.**

SECOND RESTATED BY-LAWS

OF

MKS INSTRUMENTS, INC.

ARTICLE I

NAME, LOCATION, CORPORATE SEAL, AND FISCAL YEAR

Section 1. Name. The name of the corporation is MKS Instruments, Inc.

Section 2. Location. The principal office of the corporation in Massachusetts shall be located at the registered office of the corporation set forth on the form of the Articles of Organization or on a certificate filed with the State Secretary. The Board of Directors may change the location of the principal office in Massachusetts and establish such other offices as it deems appropriate.

Section 3. Corporate Seal. The seal of the corporation shall, subject to alteration by the Board of Directors, bear the corporation's name, the word "Massachusetts" and the year of its incorporation.

Section 4. Fiscal Year. Except as otherwise determined from time to time by the Board of Directors, the fiscal year of the corporation shall in each year end on December 31.

ARTICLE II

SHAREHOLDERS

Section 1. Annual Meeting. The annual meeting of shareholders shall be held within six months after the end of each fiscal year of the corporation on a date to be fixed by the Board of Directors or the President (which date shall not be a legal holiday in the place where the meeting is to be held) at the time and place to be fixed by the Board of Directors or the President and stated in the notice of the meeting. The purposes for which the annual meeting is to be held, in addition to those prescribed by law, by the Articles of Organization or by these By-Laws, may be specified by the Board of Directors or the President. If no annual meeting is held in accordance with the foregoing provisions, a special meeting may be held in lieu of the annual meeting, and any action taken at that special meeting shall have the same effect as if it had been taken at the annual meeting, and in such case all references in these By-Laws to the annual meeting of shareholders shall be deemed to refer to such special meeting.

Section 2. Business at Annual Meetings. Except as otherwise provided by law, at an annual meeting of the shareholders, only such business shall be conducted as shall have been properly brought before the meeting. To be properly brought before an annual meeting, business

must be (a) specified in the notice of the meeting, (b) otherwise properly brought before the meeting by or at the direction of the Board of Directors, or (c) otherwise properly brought before the meeting by a shareholder.

For business to be properly brought before an annual meeting by a shareholder, the shareholder must give timely notice thereof in writing to the Secretary of the corporation. To be timely, a shareholder's notice must be delivered to or mailed and received at the principal executive offices of the corporation not less than 60 days nor more than 90 days prior to the meeting; provided, however, that in the event that less than 40 days' notice or prior public disclosure of the date of the meeting is given or made to shareholders, notice by the shareholder to be timely must be so received not later than the close of business on the 10th day following the day on which such notice of the date of the annual meeting was mailed or such public disclosure was made. A shareholder's notice to the Secretary shall set forth as to each matter the shareholder proposes to bring before the annual meeting (a) a brief description of the business desired to be brought before the annual meeting and the reasons for conducting such business at the annual meeting, (b) the name and address, as they appear on the corporation's books, of the shareholder proposing such business, (c) the class and number of shares of the corporation which are beneficially owned by the shareholder, and (d) any material interest of the shareholder in such business. No later than the tenth day following the date of receipt of a shareholder notice pursuant to this Section 2, the Chairman of the Board of Directors of the corporation shall, if the facts warrant, determine and notify in writing the shareholder submitting such notice that such notice was not made in accordance with the time limits and/or other procedures prescribed by these By-Laws. If no such notification is mailed to such shareholder within such ten-day period, such shareholder notice containing a matter of business shall be deemed to have been made in accordance with the provisions of this Section 2. Notwithstanding anything in these By-Laws to the contrary, no business shall be conducted at an annual meeting except in accordance with the procedures set forth in this Section 2.

Section 3. Special Meetings. Special meetings of shareholders may be called by the President or by the Board of Directors. In addition, upon written application of one or more shareholders who are entitled to vote and who hold at least the Required Percentage (as defined below) of the capital stock entitled to vote at the meeting, special meetings shall be called by the Secretary, or in case of the death, absence, incapacity or refusal of the Secretary, by any other officer.

For purposes of this Section 3, the "Required Percentage" shall be (i) 10% at any time at which the corporation shall not have a class of voting stock registered under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and (ii) 40% at any time at which the corporation shall have a class of voting stock registered under the Exchange Act.

Any request for a call of a special meeting of shareholders (a "Call") by the holders of the Required Percentage of the capital stock entitled to vote at the meeting (the "Voting Stock") shall be governed by and subject to the following:

- (a) Any shareholder of record seeking to solicit requests for a Call pursuant to this Section 3 shall so notify the corporation in writing to the Secretary of the

corporation and such written notification shall set forth the reason or reasons for the Call and the purpose of such special meeting.

- (b) No solicitation of shareholder requests for a Call (a "Call Solicitation") may be commenced (i) before the Call Request Record Date (as defined in paragraph (c) of this Section 3) or (ii) during the period of 90 days following the most recent meeting of the shareholders of the corporation.
- (c) In order that the corporation may determine the shareholders entitled to request a Call, the Board of Directors of the corporation shall fix a record date (the "Call Request Record Date"). Any shareholder of record seeking to solicit shareholder requests for a Call shall, with delivery to the corporation of the written information specified in paragraph (a), request in writing that the Board of Directors fix the Call Request Record Date. The Board of Directors shall, within 10 days after the date on which such request is received, adopt a vote fixing the Call Request Record Date and such Call Request Record Date shall be not more than 10 days after the date upon which such vote is adopted by the Board of Directors.
- (d) All requests for a Call and revocations thereof shall be delivered to the corporation no later than the 30th day (the "Delivery Date") after the Call Request Record Date.
- (e) Any shareholder may revoke a prior request for a Call or opposition to a Call by an instrument in writing delivered prior to the Delivery Date.
- (f) Promptly after the Delivery Date, requests for a Call and revocations thereof shall be counted and verified by an independent party selected by the corporation.
- (g) If, in response to any Call Solicitation, the holders of record of the Required Percentage of the Voting Stock as of the Call Request Record Date submit valid and unrevoked requests for a Call no later than the Delivery Date, the Board of Directors of the corporation shall fix a record date pursuant to Section 6 of Article V hereof and a meeting date for the special meeting; provided that the date to be fixed for such meeting shall be no earlier than 60 days or later than 90 days after the Delivery Date; and provided further that the Board of Directors shall not be obligated to fix a meeting date or to hold any meeting of shareholders within 60 days of the next scheduled meeting of the shareholders of the corporation.
- (h) In the absence of a quorum at any special meeting called pursuant to a Call Solicitation, such special meeting may be postponed or adjourned from time to time only by the officer of the corporation entitled to preside at such meeting.

Section 4. Time and Place of Meetings. All meetings of shareholders shall be held at a suitable time at the principal office of the corporation or at such other suitable place within Massachusetts or, to the extent permitted by the Articles of Organization, elsewhere in the



United States, as shall be selected by the President or the Board of Directors in the case of an annual meeting and, in the case of a special meeting, by the President, the Board of Directors or the applying shareholders calling such meeting.

Section 5. Notice of Meetings. A written notice of each meeting of shareholders containing the place, date and hour, and the purposes for which it is to be held, shall be given by the Secretary or, in the case of the death, absence, incapacity, or refusal of the Secretary, by any other officer, at least seven days but not more than sixty days before the date of the meeting, to each shareholder entitled to vote at the meeting and to each shareholder who is otherwise entitled by law or by the Articles of Organization or these By-Laws to such notice, by leaving such notice with him or at his residence or usual place of business or by mailing it postage prepaid and addressed to each shareholder at his address as it shall appear in the stock and transfer records of the corporation. Notice of a meeting need not be given to a shareholder if a written waiver of notice, executed before or after the meeting by such shareholder or his attorney thereunto authorized, is filed with the records of the meeting.

Section 6. Quorum. Unless otherwise provided by law, or in the Articles of Organization, these By-Laws or, to the extent authorized by law, a vote of the Board of Directors requiring satisfaction of a greater quorum requirement for any voting group, a majority of the votes entitled to be cast on the matter by a voting group constitutes a quorum of that voting group for action on that matter. As used in these By-Laws, a voting group includes all shares that, under the Articles of Organization or the Massachusetts Business Corporation Act, as in effect from time to time (the "MBCA"), are entitled to vote and to be counted together collectively on a matter at a meeting of shareholders. A share once represented for any purpose at a meeting is deemed present for quorum purposes for the remainder of the meeting and for any adjournment of that meeting unless (1) the shareholder attends solely to object to lack of notice, defective notice or the conduct of the meeting on other grounds and does not vote the shares or otherwise consent that they are to be deemed present, or (2) in the case of an adjournment, a new record date is or shall be set for that adjourned meeting. If a quorum is not present, a majority of the votes present may, from time to time, postpone to a new time or place any meeting and the postponed meeting may be held without further notice.

Section 7. Voting and Proxies. Each shareholder entitled to vote shall have one vote, to be exercised in person or by proxy, for each share of stock held by him, and a proportionate vote for a fractional share. If a quorum of a voting group exists, favorable action on a matter, other than the election of directors, is taken by a voting group if the votes cast within the group favoring the action exceed the votes cast opposing the action, unless a greater number of affirmative votes is required by law, the Articles of Organization, these By-Laws or, to the extent authorized by law, a vote of the Board of Directors requiring receipt of a greater affirmative vote of the shareholders, including more separate voting groups. Directors are elected by a plurality of the votes cast by the shares entitled to vote in the election at a meeting at which a quorum is present. No vote need be taken by ballot unless so requested by any shareholder present or represented and entitled to vote thereon. Proxies must be in writing and received by the Secretary or other officer or agent authorized to tabulate votes before being voted. The person named in a proxy may vote at any adjournment of the meeting for which the proxy was given, but the proxy shall terminate after final adjournment of the meeting. No proxy dated more than

eleven months before the meeting named in it shall be valid. Subject to the limitations of Section 7.24 of the MBCA, or any successor section thereto, the corporation is entitled to accept a proxy purporting to be executed by or on behalf of a shareholder and to give it effect as the act of the shareholder. A proxy with respect to stock held in the name of two or more persons shall be valid if executed by any one of them and the person signing appears to be acting on behalf of all of them. Inspectors of election, if any, shall be appointed by the Board of Directors or, in the absence of such appointment, by the officer presiding at any meeting of the shareholders.

Section 8. Action by Consent. Any action required or permitted to be taken by shareholders may be taken without a meeting if all shareholders entitled to vote on the matter consent in writing or by electronic transmission to the action and such written consents or electronic transmissions are filed with the records of the meetings of shareholders. Such consents shall be treated for all purposes as a vote at a meeting.

### ARTICLE III

#### THE BOARD OF DIRECTORS

Section 1. Number, Election and Qualification. The number of directors which shall constitute the whole Board of Directors shall be fixed by vote of the Board of Directors, but shall consist of not less than three directors (except that whenever there shall be only two shareholders the number of directors shall be not less than two and whenever there shall be only one shareholder or prior to the issuance of any stock, there shall be at least one director). The directors of the corporation shall be classified with respect to the time for which they severally hold office into three classes, as nearly equal in number as possible. At each annual meeting of the shareholders, the successors to the class of directors whose term expires at that meeting shall be elected by such shareholders as have the right to vote on such election to hold office for a term continuing until the annual meeting held in the third year following the year of their election and until their successors are duly elected and qualified. No director need be a shareholder of the corporation.

Section 2. Change in Size of the Board. The number of directors may be changed at any time and from time to time by a majority of the directors then in office, provided that any such action does not operate to remove a director elected by the shareholders or the directors other than in the manner specified in the Articles of Organization or these By-Laws.

Section 3. Tenure. Except as otherwise provided by law, these By-Laws or the Articles of Organization, each director shall hold office until the third annual meeting of shareholders after the meeting at which he was elected and until his successor is elected and qualified, or until his earlier death, resignation or removal.

Section 4. Vacancies. Any vacancy in the Board of Directors, however occurring, including a vacancy resulting from an enlargement of the Board, shall be filled solely by vote of a majority of the remaining directors then in office, even though such directors constitute less than a quorum of the Board of Directors. Each such successor shall hold office for the unexpired

term of his predecessor and until his successor is chosen and qualified or until his earlier death, resignation or removal.

Section 5. Resignation. Any director may resign by delivering his written resignation to the corporation at its principal office or to the Board of Directors or its Chairman. Such resignation shall be effective upon receipt unless it is specified to be effective at some other time or upon the happening of some other event.

Section 6. Removal. A director may be removed from office with or without cause by vote of the holders of a majority of the shares entitled to vote in the election of directors. However, the directors elected by the holders of a particular class or series of stock may be removed from office with or without cause only by vote of the holders of a majority of the outstanding shares of such class or series. In addition, a director may be removed from office for cause by vote of a majority of the directors then in office. A director may be removed for cause only after reasonable notice and opportunity to be heard before the body proposing to remove him.

Section 7. Nomination of Directors. Only persons who are nominated in accordance with the procedures set forth in this Section 7 shall be eligible for election as directors. Nominations of persons for election to the Board of Directors of the corporation may be made at a meeting of shareholders of the corporation by a shareholder entitled to vote for the election of directors at the meeting who complies with the notice procedures set forth in this Section 7. Any such nomination by a shareholder shall be made pursuant to timely notice in writing to the Secretary of the corporation. To be timely, a shareholder's notice shall be delivered to the principal executive offices of the corporation not less than 30 days nor more than 90 days prior to the date of the meeting; provided, however, that in the event that less than 40 days' notice or prior public disclosure of the date of the meeting is given or made to shareholders, timely notice by the shareholder must be received not later than the close of business on the 10th day following the day on which such notice of the date of the meeting was mailed or such public disclosure was made. Such shareholder's notice shall set forth (a) as to each person whom the shareholder proposes to nominate for election or re-election as a director, (i) the name, age, business address and residence address of such person (ii) the principal occupation or employment of such person, (iii) the class and number of shares of the corporation which are beneficially owned by such person and (iv) any other information relating to such person that is required to be disclosed in solicitations of proxies for election of directors or is otherwise required in each case pursuant to Regulation 14A under the Exchange Act (including without limitation such person's written consent to being named in the proxy statement as a nominee and to serving as a director if elected); and (b) as to the shareholder giving the notice, (i) the name and address, as they appear on the corporation's books, of such shareholder and (ii) the class and number of shares of the corporation which are beneficially owned by such shareholder. At the request of the Board of Directors, any person nominated by the Board of Directors for election as a director shall furnish to the Secretary of the corporation that information required to be set forth in a shareholder's notice of nomination which pertains to the nominee. No later than the tenth day following the date of receipt of a shareholder nomination submitted pursuant to this Section 7, the Chairman of the Board of Directors of the corporation shall, if the facts warrant, determine and notify in writing the shareholder making such nomination that such nomination

was not made in accordance with the time limits and/or other procedures prescribed by these By-Laws. If no such notification is mailed to such shareholder within such ten-day period, such nomination shall be deemed to have been made in accordance with the provisions of this Section 7.

Section 8. Powers. The business of the corporation shall be managed by a Board of Directors, who may exercise all the powers of the corporation except as otherwise provided by law, by the Articles of Organization or by these By-Laws. In the event of a vacancy in the Board of Directors, the remaining Directors, except as otherwise provided by law, may exercise the powers of the full Board until the vacancy is filled.

Section 9. Chairman of the Board and Vice Chairman of the Board. The Board of Directors may appoint a Chairman of the Board. If the Board of Directors appoints a Chairman of the Board, he shall perform such duties and possess such powers as are assigned to him by the Board of Directors. If the Board of Directors appoints a Vice Chairman of the Board, he shall, in the absence or disability of the Chairman of the Board, perform the duties and exercise the powers of the Chairman of the Board and shall perform such other duties and possess such other powers as may from time to time be vested in him by the Board of Directors.

Section 10. Regular Meetings. Regular meetings of the Directors may be held without call or notice at such places, within or without Massachusetts, and at such times as the Directors may from time to time determine, provided that any Director who is absent when such determination is made shall be given notice of the determination. A regular meeting of the Directors may be held without a call or notice immediately after and at the same place as the annual meeting of shareholders.

Section 11. Special Meetings. Special meetings of the Directors may be held at any time and place, within or without Massachusetts, designated in a call by the Chairman of the Board, President, Treasurer, two or more Directors or by one Director in the event that there is only a single Director in office.

Section 12. Meetings by Telephone Conference Call. Directors or members of any committee designated by the Board of Directors may participate in a meeting of the Board of Directors or such committee by means of a conference telephone or any other communications equipment by means of which all persons participating in the meeting can simultaneously hear each other and participation by such means shall constitute presence in person at a meeting.

Section 13. Notice of Special Meetings. Notice of any special meeting of the Board of Directors shall be given to each director by the Secretary or by the officer or one of the directors calling the meeting. Notice shall be duly given to each director (i) by notice given to such director in person or by telephone or electronic communication at least 24 hours in advance of the meeting, (ii) by sending a telegram or telex, or by delivering written notice by hand, to his last known business or written notice to his last known business or home address at least 48 hours in advance of the meeting. Notice need not be given to any director if a written waiver of notice, executed by him before or after the meeting, is filed with the records of the meeting, or to any director who attends the meeting without protesting prior to the meeting or at its

commencement the lack of notice to him. If notice is given in person or by telephone or electronic communication, an affidavit of the Secretary, officer or director who gives such notice that the notice has been duly given shall, in the absence of fraud, be conclusive evidence that such notice was duly given.

Section 14. Quorum. At any meeting of the Board of Directors, a majority of the directors then in office shall constitute a quorum. A majority of directors present at any meeting, even if less than a quorum, may adjourn the meeting from time to time without further notice.

Section 15. Action at Meeting. At any meeting of the Board of Directors at which a quorum is present, the vote of a majority of those present shall be sufficient to take any action, unless a different vote is specified by law, by the Articles of Organization or by these By-Laws.

Section 16. Action by Consent. Any action required or permitted to be taken at any meeting of the Board of Directors may be taken without a meeting if all of the directors consent to the action in writing or by electronic transmission and such consents are filed with the records of the meetings of the Board of Directors. Such consents shall be treated for all purposes as a vote at a meeting.

Section 17. Committees. The Board of Directors may, by vote of a majority of the directors then in office, elect from their number an executive committee or other committees and may by like vote delegate to committees so elected some or all of their powers to the extent permitted by law. Except as the Board of Directors may otherwise determine, any such committee may make rules for the conduct of its business, but unless otherwise provided by the directors or in such rules, its business shall be conducted as nearly as possible in the same manner as is provided by these By-Laws for the directors. The Board of Directors shall have the power at any time to fill vacancies in any such committee, to changes its membership or to discharge the committee.

Section 18. Compensation of Directors. Directors may be paid such compensation for their services and such reimbursement for expenses of attendance at meetings as the Board of Directors may from time to time determine. No such payment shall preclude any director from serving the corporation in any other capacity and receiving compensation therefor.

#### ARTICLE IV

#### OFFICERS

Section 1. Designation and Qualification. The officers of the corporation shall consist of a President, a Treasurer, a Secretary, and such other officers including one or more Vice Presidents, Assistant Treasurers and Assistant Secretaries as the Board of Directors may elect. No officer need be a shareholder or a director. A person may hold more than one office at the same time provided that the President and Secretary may not be the same person except when there is only one shareholder. Any officer may be required by the Board of Directors to give

bond for the faithful performance of his duties to the corporation in such amount and with such sureties as the Board of Directors may determine.

Section 2. Election and Term. The President, Treasurer and Secretary shall be elected annually by the Board of Directors at the annual meeting of the Board of Directors (which, unless otherwise determined by the Board of Directors, shall be the meeting of the Board of Directors first following the annual meeting of shareholders) and shall hold office until the next annual meeting of the Board of Directors and until their respective successors are chosen and qualified. All other officers may be elected by the Board of Directors at any time and shall hold office for such term as the Board of Directors determines.

Section 3. President. The President shall be the chief executive officer of the corporation, except as the Board of Directors may otherwise provide, and shall have general supervision and control of the business of the corporation subject to the direction of the Board of Directors. The President shall also have such other powers and duties as the Board of Directors may decide. It shall be his duty, and he shall have the power, to see that all orders and votes of the directors are carried into effect. Unless the Board of Directors provides otherwise, the President or his designee shall preside at all meetings of the shareholders and at all meetings of the Board of Directors. Unless otherwise directed by the Board of Directors, the President may on behalf of the corporation vote or consent to any action with respect to or in connection with any interest that the corporation may hold or have in any other corporation or in any partnership, joint venture, association, trust, proprietorship, business entity or common undertaking whatsoever, and may appoint any other person or persons to act as proxy or attorney-in-fact for the corporation, with or without power of substitution. The Board of Directors may from time to time confer like powers upon any other officer.

Section 4. Vice President. The Vice President or Vice Presidents, if any, shall have such powers and perform such duties as may be assigned to them by the Board of Directors or the President. In the absence of the President or in the event of his inability to act, the Vice President, if any, or, if there is more than one Vice President, the First Vice President, or, if no First Vice President has been designated, the Vice President senior in office, shall have and may exercise all the powers and duties of the President.

Section 5. Treasurer and Assistant Treasurers. The Treasurer shall have such powers incident to the office of the Treasurer, including without limitation the duty and power to keep and be responsible for all funds and securities of the Corporation, to deposit and disburse such funds as ordered by the Board of Directors, the Chief Executive Officer, the President or the Vice President of Finance, and to make proper accounts of such funds. He shall render to the President or to the Board of Directors, whenever either may require it, a statement of the accounts of his transactions as Treasurer and of the financial condition of the corporation. The Treasurer shall perform such other duties and have such powers additional to the foregoing as the directors or the President may designate.

Any Assistant Treasurer shall have such powers and duties as the Board of Directors or the President may decide.

Section 6. Secretary and Assistant Secretaries. The Secretary shall record in books kept for that purpose all votes, consents and the proceedings of all meetings of the shareholders and of the Board of Directors. Record books of shareholders' meetings shall be open at all reasonable times to the inspection of any shareholder. The Secretary shall notify the shareholders and directors of all meetings in accordance with these By-Laws.

In the absence of the Secretary from any meeting of the shareholders or from any meeting of the directors, the Assistant Secretary, if one be elected, or, if there be more than one, the one designated for the purpose by the directors, and otherwise a temporary secretary designated by the person presiding at the meeting, shall perform the duties of the Secretary.

Any Assistant Secretary shall have such other powers and duties as the Board of Directors may decide.

Section 7. Vacancies. A vacancy in any office may be filled by the Board of Directors by the election of a successor to hold office for the unexpired term of the officer whose place is vacant and until his successor is chosen and qualified.

Section 8. Removal. All officers may be removed from their respective offices with or without cause by vote of a majority of the directors then in office.

Section 9. Resignation. Any officer may at any time resign his office by delivering a written resignation to the corporation. Such resignation, unless a later date is specified therein, shall take effect upon delivery to the principal office of the corporation, and acceptance thereof shall not be necessary to make it effective.

Section 10. Salaries. Officers of the corporation shall be entitled to such salaries, compensation or reimbursement as shall be fixed or allowed from time to time by the Board of Directors or an appropriate committee of the Board of Directors.

## ARTICLE V

### CAPITAL STOCK

Section 1. Certificates of Stock. Each shareholder shall be entitled to a certificate in the form approved by the Board of Directors stating the number, class, and designation of series, if any, of the shares held by him. Such certificate shall be signed by the President or a Vice President and by the Treasurer or an Assistant Treasurer. Such signatures may be facsimiles if the certificate is countersigned by a transfer agent, or by a registrar of transfers, other than a director, officer or employee of the corporation. In case any officer who has signed or whose facsimile signature has been placed on such certificate shall have ceased to be such officer before such certificate is issued, it may be issued by the corporation with the same effect as if he was such officer at the time of its issue.

Every certificate for shares of stock subject to any restriction on transfer pursuant to the Articles of Organization, these By-Laws, or any agreement to which the corporation is a party shall have the restriction noted conspicuously on the certificate and shall also set forth on the face or back either the full text of the restriction or a statement of the existence of such restriction and a statement that the corporation will furnish a copy to the holder of such certificate upon written request and without charge. If the corporation is authorized to issue more than one class or series of stock, every certificate issued shall set forth on its face or back either the full text of the preferences, voting powers, qualifications and special and relative rights of the shares of each class and series authorized to be issued or a statement of the existence of such preferences, voting powers, qualification and special and relative rights, and a statement that the corporation will furnish a copy thereof to the holder of such certificate upon written request and without charge.

Section 2. Transfer. Shares of stock shall be transferred of record on the books of the corporation only upon the surrender to the corporation or its transfer agent of the certificate therefor properly endorsed for transfer (or accompanied by a written assignment and power of attorney properly executed for transfer; and only upon compliance with the provisions, if any, respecting restrictions on transfer contained in the Articles of Organization, these By-Laws or any agreement to which the corporation is a party. The corporation may require proof of the genuineness of the signature and the capacity of the party presenting the certificate for transfer.

It shall be the duty of each shareholder to notify the corporation of his post office address and of his taxpayer identification number.

Section 3. Interest Not Recognized. The corporation shall be entitled to treat the holder of record of any share or shares of stock as the holder in fact thereof and shall not be bound to recognize any other claim to or interest in such share or shares on the part of any other person except as may be otherwise expressly provided by law.

Section 4. Lost, Mutilated or Destroyed Certificates. Subject to Section 8-405 of the Massachusetts Uniform Commercial Code, as amended from time to time, the Board of Directors may determine the conditions upon which a new certificate of stock may be issued in place of any certificate alleged to have been lost, mutilated or destroyed. It may, in its discretion, require the owner of a lost, mutilated or destroyed certificate, or his legal representative, to give a bond, with or without surety, sufficient in its opinion to indemnify the corporation against any loss, claim or expense which may arise by reason of the issuance of a new certificate in place of such lost, mutilated or destroyed stock certificate.

Section 5. Transfer Agent and Registrar. The Board of Directors may appoint a transfer agent or a registrar, or both, and require all stock certificates to bear the signature or facsimile thereof of any such transfer agent or registrar. Unless the Board of Directors shall appoint a transfer agent, registrar or other officer or officers for the purpose, the Secretary shall be charged with the duty of keeping, or causing to be kept, accurate records of all stock outstanding, stock certificates issued, and stock transfers. Subject to any other rules which may be adopted from time to time by the Board of Directors, such records may be kept solely in the stock certificate books.



Section 6. Setting Record Date and Closing Transfer Records. The Board of Directors may fix in advance a time not more than seventy days before (i) the date of any meeting of the shareholders or (ii) the date for the payment of any dividend or the making of any distribution to shareholders or (iii) the last day on which the consent or dissent of shareholders may be effectively expressed for any purpose, as the record date for determining the shareholders having the right to notice of, and to vote at, such meeting or any adjournment thereof, or the right to receive such dividend or distribution, or the right to give such consent or dissent. If a record date is fixed by the Board of Directors, only shareholders of record on such date shall have such rights notwithstanding any transfer of stock on the records of the corporation after such date. Without fixing such record date, the Board of Directors may close the transfer records of the corporation for all or any part of such seventy-day period.

If no record date is fixed and the transfer books are not closed, then the record date for determining shareholders having the right to notice of or to vote at a meeting of shareholders shall be at the close of business on the date next preceding the day on which notice is given, and the record date for determining shareholders for any other purpose shall be at the close of business on the date on which the Board of Directors acts with respect thereto.

Section 7. Issue of Stock. Unless otherwise voted by the shareholders, the whole or any part of any unissued balance of the authorized capital stock of the corporation may be issued or disposed of by vote of the Board of Directors, in such manner, for such consideration and on such terms as the directors may determine.

## ARTICLE VI

### CORPORATE RECORDS

Section 1. Records to be Kept. The corporation shall keep as permanent records minutes of all meetings of its shareholders and Board of Directors, a record of all actions taken by the shareholders or Board of Directors without a meeting, and a record of all actions taken by a committee of the Board of Directors in place of the Board of Directors on behalf of the corporation. The corporation shall maintain appropriate accounting records. The corporation or its agent shall maintain a record of its shareholders, in a form that permits preparation of a list of the names and addresses of all shareholders, in alphabetical order by class of shares showing the number and class of shares held by each. The corporation shall maintain its records in written form or in another form capable of conversion into written form within a reasonable time.

The corporation shall keep within The Commonwealth of Massachusetts a copy of the following records at its principal office or an office of its transfer agent or of its Secretary or Assistant Secretary or of its registered agent:

- (a) its Articles of Organization or Restated Articles of Organization and all amendments to them currently in effect;
- (b) its By-Laws or Restated By-Laws and all amendments to them currently in effect;

- (c) resolutions adopted by its Board of Directors creating one or more classes or series of shares, and fixing their relative rights, preferences and limitations, if shares issued pursuant to those resolutions are outstanding;
- (d) the minutes of all shareholders' meetings, and records of all action taken by shareholders without a meeting, for the past three years;
- (e) all written communications to shareholders generally within the past three years, including the financial statements furnished under Section 16.20 of the MBCA, or any successor Section thereto, for the past three years;
- (f) a list of the names and business addresses of its current directors and officers; and
- (g) its most recent annual report delivered to the Massachusetts Secretary of State.

Section 2. Inspection of Records. A shareholder is entitled to inspect and copy, during regular business hours, copies of any of the corporate records of the corporation described in Sections 16.02(a) and (b) of the MBCA, provided that such shareholder complies with the restrictions and requirements set forth in Section 16.02 of the MBCA. Shareholders may not inspect or copy such records if the corporation shall have determined in good faith that disclosure of the records would adversely affect the corporation in the conduct of its business or constitute material non-public information at the time when the shareholder's notice of demand to inspect and copy is received by the corporation.

## ARTICLE VII

### CHECKS, NOTES, DRAFTS AND OTHER INSTRUMENTS

Checks, notes, drafts and other instruments for the payment of money drawn or endorsed in the name of the corporation may be signed by any officer or officers or person or persons authorized by the directors to sign the same. No officer or person shall sign any such instrument as aforesaid unless authorized by the directors to do so.

## ARTICLE VIII

### AMENDMENTS

These By-Laws may be amended by vote of the holders of at least sixty-six and two-thirds percent (66 2/3%) of the shares of each class of the capital stock at the time outstanding and entitled to vote at any annual or special meeting of shareholders, if notice of the substance of the proposed amendment is stated in the notice of such meeting. If authorized by the Articles of Organization, the Board of Directors, by a majority of their number then in office, may also make, amend or repeal these By-Laws, in whole or in part, except with respect to (a) the provisions of these By-Laws governing the amendment of these By-Laws and (b) any provision

of these By-Laws which by law, the Articles of Organization or these By-Laws requires action by the shareholders.

Not later than the time of giving notice of the meeting of shareholders next following the making, amending or repealing by the Board of Directors of any By-Law, notice stating the substance of such change shall be given to all shareholders entitled to vote on amending the By-Laws. Any action taken by the Board of Directors with respect to the By-Laws may be amended or repealed by the shareholders.

## ARTICLE IX

### MISCELLANEOUS PROVISIONS

#### Section 1. Transactions with Interested Parties.

- (a) A director who has a financial, family or other interest in a contract or other transaction may be counted for purposes of establishing the existence of a quorum at a meeting of the Board of Directors (or of a committee of the Board of Directors) at which action with respect to the transaction is taken and may vote to approve the transaction and any related matters.
- (b) A contract or other transaction in which a director or officer has a financial, family or other interest shall not be void or voidable for that reason, if any one of the following is met:
  - (1) The material facts as to the director's or officer's interest are disclosed or are known to the Board of Directors or committee of the Board of Directors acting on the transaction, and the Board of Directors or committee authorizes, approves or ratifies the transaction by the affirmative vote of a majority of the disinterested directors (or, if applicable, the sole disinterested director) on the Board of Directors or committee, as the case may be, even though the disinterested directors be less than a quorum; or
  - (2) The material facts as to the director's or officer's interest are disclosed or are known to the holders of the shares of the corporation's capital stock then entitled to vote for directors and such holders, voting such shares as a single class, by a majority of the votes cast on the question, specifically authorize, approve or ratify the transaction; or
  - (3) The transaction was fair to the corporation as of the time it was entered into by the corporation.

A failure to meet any of the requirements in subparagraphs (1), (2) or (3) shall not create an inference that the transaction is void or voidable for that reason.

Section 2. Massachusetts Control Share Acquisition Act. The provisions of Chapter 110D of the Massachusetts General Laws shall not apply to the corporation.

Section 3. Evidence of Authority. A certificate by the Secretary or an Assistant Secretary or a temporary Secretary as to any action taken by the shareholders, the Board of Directors, any committee or any officer or representative of the corporation shall as to all persons who rely on the certificate in good faith be conclusive evidence of such action.

Section 4. Articles of Organization. All references in these By-Laws to the Articles of Organization shall be deemed to refer to the Articles of Organization of the corporation, as amended and in effect from time to time.

Section 5. Severability. Any determination that any provision of these By-Laws is for any reason inapplicable, illegal or ineffective shall not affect or invalidate any other provision of these By-Laws.

Section 6. Pronouns. All pronouns used in these By-Laws shall be deemed to refer to the masculine, feminine or neuter, singular or plural, as the identity of the person or persons may require.

Section 7. Manner of Notice. All notices provided for under these By-Laws shall conform to the following requirements:

- (a) Notice shall be in writing unless oral notice is reasonable under the circumstances. Notice by electronic transmission is written notice.
- (b) Notice may be communicated in person; by telephone, voice mail, telegraph, teletype or other electronic means; by mail; by electronic transmission; or by messenger or delivery service. If these forms of personal notice are impracticable, notice may be communicated by a newspaper of general circulation in the area where published; or by radio, television or other form of public broadcast communication.
- (c) Written notice, other than notice by electronic transmission, by the corporation to any of its shareholders, if in a comprehensible form, is effective upon deposit in the United States mail, if mailed postpaid and correctly addressed to the shareholder's address shown in the corporation's current records.
- (d) Written notice by electronic transmission by the corporation to any of its shareholders, if in comprehensible form, is effective: (1) if by facsimile telecommunication, when directed to a number furnished by the shareholder for the purpose; (2) if by electronic mail, when directed to an electronic mail address furnished by the shareholder for the purpose; (3) if by a posting on an electronic network together with separate notice to the shareholder of such specific posting, directed to an electronic mail address furnished by the shareholder for the purpose, upon the later of (i) such posting and (ii) the giving of such separate

notice; and (4) if by any other form of electronic transmission, when directed to the shareholder in such manner as the shareholder shall have specified to the corporation. An affidavit of the Secretary or an Assistant Secretary of the corporation, the transfer agent or other agent of the corporation that the notice has been given by a form of electronic transmission shall, in the absence of fraud, be prima facie evidence of the facts stated therein.

- (e) Except as provided in subsection (c) of this Section 7, written notice, other than notice by electronic transmission, if in a comprehensible form, is effective at the earliest of the following: (1) when received; (2) five days after its deposit in the United States mail, if mailed postpaid and correctly addressed; (3) on the date shown on the return receipt, if sent by registered or certified mail, return receipt requested; or if sent by messenger or delivery service, on the date shown on the return receipt signed by or on behalf of the addressee; or (4) on the date of publication if notice by publication is permitted.
- (f) Oral notice is effective when communicated if communicated in a comprehensible manner.

Approved by the Board of Directors on February 7, 2005, subject to shareholder approval.

ANNUAL MEETING OF SHAREHOLDERS OF  
MKS INSTRUMENTS, INC.  
MAY 9, 2005

Please detach and mail in the envelope provided.

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MKS INSTRUMENTS, INC.  
2005 ANNUAL MEETING OF SHAREHOLDERS  
MAY 9, 2005

THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS

The undersigned shareholder of MKS Instruments, Inc., a Massachusetts corporation (the "Company"), hereby acknowledges receipt of the Notice of Annual Meeting of Shareholders and Proxy Statement, each dated \_\_\_\_, 2005, and hereby appoints John R. Bertucci, Richard S. Chute and Ronald C. Weigner, and each of them acting singly, proxies and attorneys-in-fact, with full power to each of substitution, on behalf and in the name of the undersigned, to represent the undersigned at the 2005 Annual Meeting of Shareholders of the Company to be held on May 9, 2005, at 10:00 a.m. at the Andover Country Club, 60 Canterbury Street, Andover, Massachusetts 01810, and at any adjournment(s) thereof, and to vote all shares of Common Stock which the undersigned would be entitled to vote if then and there personally present, on the matters set forth on the reverse side, and, in their discretion, upon any other matters which may properly come before the meeting.

This proxy, when properly executed, will be voted as directed on the reverse side, or, if no contrary direction is indicated, will be voted FOR the election of the two (2) nominees listed on the reverse side as Class III Directors of the Company, FOR proposals 2 through 3 and as said proxies deem advisable on such other matters as may properly come before the meeting.

PLEASE DATE, SIGN AND MAIL YOUR PROXY CARD IN THE ENVELOPE PROVIDED AS SOON AS POSSIBLE.

(CONTINUED AND TO BE SIGNED ON THE REVERSE SIDE)

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THE BOARD OF DIRECTORS RECOMMENDS A VOTE "FOR" THE ELECTION OF DIRECTORS AND "FOR" PROPOSALS 2 THROUGH 3.

Vote on Directors

1. To elect two (2) Class III Directors for a term of three (3) years.

Nominees:

01) John R. Bertucci

02) Robert R. Anderson

FOR ALL

WITHHOLD FOR ALL

FOR ALL EXCEPT

To withhold authority to vote for any individual nominee(s), mark "For All Except" and write the nominee's number on the line below.

\_\_\_\_\_

Vote on Proposals

2. To approve the Company's Second Restated By-Laws.

FOR

AGAINST

ABSTAIN

3. To ratify the selection of PricewaterhouseCoopers LLP as the Company's independent auditors for the year ending December 31, 2005.

FOR

AGAINST

ABSTAIN

TO ENSURE YOUR REPRESENTATION AT THE ANNUAL MEETING, PLEASE MARK, SIGN AND DATE THIS PROXY AND RETURN IT AS PROMPTLY AS POSSIBLE.

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

\_\_\_\_\_  
Signature [PLEASE SIGN WITHIN BOX]

\_\_\_\_\_  
Date:

\_\_\_\_\_  
Signature (Joint Owners)

\_\_\_\_\_  
Date: