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January 13, 2009

Mary Beth Breslin, Senior Attorney
United States Securities & Exchange Commission
Division of Corporation Finance
100 F Street, N.E.
Washington, DC 20549-6010

RE: MKS Instruments, Inc.
Annual Report on Form 10-K for fiscal year ended December 31, 2007
Filed February 28, 2008
Form 10-Q for the quarterly period ended September 30, 2008
Filed November 7, 2008
File No. 000-23621

Dear Ms. Breslin:

This letter is submitted to you on behalf of MKS Instruments, Inc. ("MKS") in response to your letter to Mr. Berlinghieri dated December 31, 2008. We have included each of your questions below. Beneath each question is our corresponding answer.

Form 10-K for fiscal year ended December 31, 2007

Item 9A. Controls and Procedures, page 67

Question 1. We note your disclosure that your chief executive officer and chief financial officer concluded that your "disclosure controls and procedures are effective and designed to ensure that the information required to be disclosed in [your] reports filed or submitted under the Exchange Act is recorded, processed, summarized and reported within the requisite time periods." If you elect to include any qualifying language as to the effectiveness conclusion, in your future filings such language should include, at a minimum, but only if true, that your officers concluded that your disclosure controls and procedures are effective to ensure that information required to be disclosed by you in reports that you file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms and is accumulated and communicated to your management, including your principal executive officer and principal financial officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure. See Exchange Act Rule 13a-15(e). Alternatively, if true, your disclosure could simply indicate that your officers determined that your "disclosure controls and procedures are effective" without any further qualifications or attempts to define those disclosure controls and procedures.

Response. We will revise our disclosure under the Controls and Procedures section in future filings to address both prongs of the definition of disclosure controls and procedures. Accordingly, we plan to replace the first two paragraphs that appeared under Item 9A of Annual Report on Form 10-K for the year ended December 31, 2007 with the following in our Annual Report on Form 10-K for the year ended December 31, 2008:

“Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2008. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company’s management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of December 31, 2008, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms and is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer as appropriate to allow timely decisions regarding required disclosure.”

Item 11. Executive Compensation, page 68

Question 2. Your Compensation Discussion and Analysis should be sufficiently precise to identify material differences in compensation policies with respect to individual executive officers. In future filings, please explain the reasons for the differences in the amounts of compensation awarded to the named executive officers. We refer you to Release 33-8732A, Section II.B.1. For example, we note the disparity between your chief executive officer’s compensation and that of the other named executive officers. In future filings, please provide a more detailed discussion of how and why your chief executive officer’s compensation differs from that of the other named executive officers. See Item 402(b)(2)(vii) of Regulation S-K.

Response. In determining the compensation of our named executive officers, we rely on competitive market data on a position-by-position basis, as described more fully in our response to Question 3 below. The differentiation in compensation among the Named Executive Officers (including the CEO) reflects the relative value that the market places on these positions, as well as the individuals' performance, tenure and potential with the company. We will provide this elaboration in future filings.

Question 3. We note your disclosures on pages 11, 13 and 14 of your proxy statement regarding benchmarking elements of compensation against comparable companies. Please expand your disclosure to address how you target each element of compensation against comparator companies. Please specify how each element of compensation relates to the data you have analyzed from the comparator companies. Also include a discussion of where you target each element of compensation against the peer companies and whether actual payments fell within the targeted parameters for each named executive officer. To the extent actual compensation was outside a targeted percentile range, please explain why. Finally, please identify the companies in any peer groups you used for compensation purposes.

Response. We benchmark various compensation elements, including salary, total cash compensation, and long-term incentives, to the median levels for the individual position in the market. Currently, all of our Named Executive Officers are paid in the range of their competitive market, or slightly below the range of their competitive market. As stated in our response to Question 2 above, in considering the compensation of an executive relative to the market level, we look qualitatively at the individuals' overall performance, tenure and potential with the company. We assess compensation against a peer group of the following companies, supplemented by compensation survey data, which in 2008 was provided by Radford Surveys & Consulting.

Advanced Energy Industries, Inc.
Axcelis Technologies, Inc.
Brooks Automation, Inc.
Coherent, Inc.
Creedence Systems Corp.
Cymer, Inc.
Daktronics, Inc.
Entegris, Inc.
FEI Co.

Itron, Inc.
Kulicke & Soffa Industries, Inc.
Newport Corp.
Photronics, Inc.
Tektronix, Inc.
Teradyne, Inc.
Varian, Inc.
Varian Semiconductor Equipment Assoc., Inc.
Verigy Ltd.

We will provide this elaboration in future filings.

Question 4. We note your disclosure under "Short-term Incentives" on page 12 of your proxy statement that actual awards made under the Management Incentive Bonus Plan are based on corporate pro-forma pre-tax earning goals and annual earnings goals for particular product groups. You have not quantified, however, the targets that were necessary to be achieved in order for your named executive officers to earn their compensation under the Management Incentive Plan. As applicable, please provide such disclosure in your future filings. To the extent you believe that disclosure of the targets, on a historical basis,

would result in competitive harm such that the targets could be excluded under Instruction 4 to Item 402(b) of Regulation S-K, please provide us with a detailed explanation supporting your conclusion. Refer also to Question 118.04 of the Regulation S-K Compliance and Disclosure Interpretations available on our website at <http://www.sec.gov/divisions/corpfin/guidance/regs-kinterp.htm>. If it is appropriate to omit specific targets or performance objectives based on a competitive harm analysis, please provide the appropriate disclosure pursuant to Instruction 4 to Item 402(b) of Regulation S-K. If discussing how difficult or likely it will be to achieve the targeted financial measures or other factors, you should provide as much detail as necessary without disclosing information that poses a reasonable risk of competitive harm and provide sufficient discussion and analysis as to the level of increased performance the established financial measures are intended to incentivize.

Response. With regard to our historic corporate pro-forma pre-tax operating income incentive targets, we will, in the future, provide historic achievement and targets. With regard to our annual product group earnings targets, we believe that the disclosure of these historic earnings targets for a particular product group, coupled with disclosure about the actual bonus achieved, would give our competitors information about our targeted and achieved profit margins for that product group. We do not disclose product group profit margins and consider such information to be confidential commercial or financial information. The Company believes that disclosure of this sensitive information would result in competitive harm to MKS in that it would provide competitors with insight into the product group's economic structure and profit model and would impair the Company's future negotiating position. Accordingly, in future filings, in accordance with Instruction 4 to Item 402(a) of Regulation S-K, we will provide information regarding the difficulty of achieving the product group earnings goals, including historic achievement levels.

Item 13. Certain Relationships and Related Transactions..., page 69

Question 5. Please tell us, and in future filings disclose, the standards applied by your Audit Committee for reviewing and approving related party transactions. Refer to Item 404(b)(1) of Regulation S-K.

Response. Our written Code of Business Conduct and Ethics sets forth the general principle that our directors, officers and employees should refrain from engaging in any activity having a personal interest that presents a "conflict of interest". The Code prohibits certain specified activities, and also prohibits directors, officers and employees from engaging in any other activity that may reasonably be expected to give rise to a conflict of interest or to adversely affect the interests of MKS. The Code provides that all employees are responsible to disclose any material transaction or relation that reasonably could be expected to give rise to a material conflict of interest to the Chief Financial Officer and officers and directors must report such transactions to the Board of Directors, who shall be responsible for determining whether such transaction or relationship constitutes a material conflict of interest. In addition, pursuant to its written charter, the Audit Committee must review all "related party transactions" (defined as transactions required to be disclosed pursuant to Item 404 of Regulation S-K) on an ongoing basis. Accordingly, any conflict of interest that arises at any time that constitutes a "related

party transaction” will be reported to the Audit Committee as such for its review. Additionally, directors and officers are required to submit annual certifications as to whether they are involved in any “related party transaction” and the Audit Committee reviews any such activities annually. We will provide this elaboration in future filings, beginning with our proxy statement to be filed in 2009.

Question 6. We note your disclosure on page 7 of your proxy statement regarding the independence of Mr. Anderson due to his relationship with Yield Dynamics. Please provide us with your basis for not disclosing your transaction(s) with Yield Dynamics in Item 13.

Response. The transactions(s) with Yield Dynamics are disclosed in Item 13. Item 13 incorporates by reference the information set forth under the caption “Corporate Governance” in the Company’s definitive proxy statement. The disclosure of Mr. Anderson’s relationship with Yield Dynamics is included in the second paragraph under that caption in the proxy statement.

Form 10-Q for period ended September 30, 2008

Results of Operations, page 15

Question 7. We note your disclosure on page 15 that product revenues decreased \$28.8 million during the three months ended September 30, 2008 mainly due to a decrease in worldwide demand. It appears from your disclosure on page 9, however, that decreased product revenues in the United States accounted for the vast majority of the \$28.8 reduction. Please advise. In your future filings, as applicable, please address whether changes in product revenues are attributable to increased or decreased sales in particular geographic regions.

Response. The primary cause of our overall product revenue decrease for the period was a decrease in worldwide demand from our semiconductor capital equipment manufacturer customers. This decrease in demand occurred throughout our geographic markets. However, the worldwide decreases in revenue for the semiconductor market were offset outside the U.S. by increased revenues in non-semiconductor markets, mainly solar. As a result, overall product sales, as disclosed on page 9, appear to be significantly down only in the U.S. We will clarify our disclosure in future filings as appropriate under the circumstances.

As per your request, we hereby acknowledge the following:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
 - staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
 - the company may not assert comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.
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Mary Beth Breslin, Senior Attorney
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Please do not hesitate to contact me or Kathleen Burke, Corporate Counsel at (978) 645-5500 should you have any further questions or comments.

Sincerely,

/s/ Ronald C. Weigner

Ronald C. Weigner
Vice President & CFO