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April 30, 2012

Martin James, Senior Assistant Chief Accountant
United States Securities & Exchange Commission
Division of Corporation Finance
100 F Street, N.E.
Washington, DC 20549-6010

RE: MKS Instruments, Inc.
Form 10-K for the Fiscal Year Ended December 31, 2010
Filed February 25, 2011
File No. 000-23621

Dear Mr. James:

This letter is submitted to you on behalf of MKS Instruments, Inc. (the "Company") in response to your letter dated March 23, 2012. We have included each of your questions below in bold and italics. Beneath each question is our corresponding answer.

Form 10-K for the Fiscal Year Ended December 31, 2010

Note 22. Geographic, Product and Significant Customer Information, page 67

1. From your responses to our prior comments we note that the company prepares Product Group Partial Income Statements on a monthly basis. We further note that this financial information is given to both the CODM and the Board of Directors and that the CODM discusses this information during scheduled meetings with the relevant managers, with managers from each group (i.e., PRG, ASG, CIT, etc.) making scheduled presentations sometimes for as long as two hours.

- In light of the fact that ASC 280-10-50-1 defines an "operating segment" as a component of a public entity that, among other characteristics, has operating results that are regularly reviewed by the CODM to make decisions about resources to be allocated to the segment and assess its performance, please tell us why the product groups whose monthly results are regularly presented to, discussed with, and reviewed by your CODM and your Board of Directors would not represent your operating segments.***
- Since your response states that the CODM does not use the financial information for resource decisions, please tell us why this information is regularly provided to the CODM and the Board of Directors.***
- Tell us how, in spite of having been presented with all this information, the CODM is able to allocate resources and assess performance without using the disaggregated information.***

Company Response

As the Staff has noted, the Company produces Partial Product Group Income Statements and certain financial information that constitutes component financial information and this component financial information is presented in the Monthly Business Reviews (“MBR”) which are attended by the Company’s CODM. In our response below, we would like to provide the Staff with additional information regarding how the Company is organized and managed including:

1. The purpose of the MBR, who attends them and the format of the meetings, including how the meeting time is allotted and used.
2. A description of why this component financial information is presented in these meetings and how the information is used.
3. The significant limitations of this component financial information, specifically the fact that this component financial information represents only 54% of the Company’s consolidated external sales and that the other 46% of sales does not consolidate into the product group component financial information.
4. A description of how and why the CODM uses consolidated financial information and a customer centric approach to assess the business and make critical resource allocations.
5. A description of what information is provided to the Board of Directors (“BOD”) and how that information is used, and,
6. A description of the information provided to investors, and how management describes the business to investors including on earnings calls.

Monthly Business Reviews (“MBR”) and product group component financial information

The primary purpose of the MBR is to review research and development activities, product and customer technical challenges and product quality issues in detail. These meetings are attended by up to approximately 30 people across all product groups, the majority of which are research and development engineers and quality managers. Senior management, Product Group Vice President’s and functional Vice President’s (sales, quality, service, finance, and human resources) attend as well. Presentations and discussions are led by the technical people (engineers). These MBRs are not individual product group reviews but rather all product groups present to the full group. The reason for this group approach is that, the Company’s key customers (which the top 10 customers represented 41% of 2011 sales) purchase products across all of the Company’s product groups and view MKS as one entity when assessing the Company’s quality, pricing and results (on time shipments, service, customer service, engineering and other key vendor metrics). Accordingly, these meetings have been structured for engineers to share issues and learning across the Company with a focus on overall customer satisfaction.

Substantially all of the time in these MBRs is allotted to the discussion on research, development and quality matters and the primary presenters are the product group’s lead engineers or quality personnel. For example, in the October 2011 MBR (the sample of which was provided to the Staff in our previous response), 2 1/2 hours was allotted to the Power and Reactive Gas product groups to present, of which 2 hours was allotted to research and development engineers to present technical product information (specifically quality and reliability issues) and 1/2 hour was allotted for the financial review. Similarly, for the ASG product group, in the October MBR, 1 hour was allotted to the engineers to present technical product information and 15 minutes was allotted for the financial review. In addition, once per quarter, the MBR is focused on customers and markets. These meetings follow a similar format except, marketing presents individual product line wins and opportunities. The primary purpose is to share wins and identify opportunities for many of the Company’s products.

The component financial information including the Partial Product Group Income Statements is presented in the last portion of these meetings as described above. This information is utilized to review trends in bookings and sales, to assess product group research and development expenditures and certain controllable (by the product group) operating expenses. The Product Group Vice Presidents are only held accountable for product group research and development expenditures and certain controllable operating expenses such as travel and entertainment, and research and development project materials. In addition, no portion of the Product Group Vice Presidents incentive compensation is based on product group results; only on consolidated results. The Partial Product Group Income Statements are presented because they are readily available in the Company's accounting systems and elements of these Partial Product Group Income Statements are used by the various functional managers and line managers within the product groups, for example, the Vice President of Operations who reviews cost of goods sold across all of the manufacturing sites for which he is responsible.

As part of the accounting and finance review, each month, the Corporate Finance Organization receives thirty-seven individual income statements (which include Partial Product Group Income Statements) that contain individual forecasted financial results for the current quarter. Once a quarter, the forecasts submitted are expanded to include the next four fiscal quarter's forecasts. The thirty-seven forecasts are on a legal entity/tax basis and Product Groups as discussed above, and the Corporate Finance Organization produces consolidated GAAP based forecasted financial results from this information. The Corporate Finance Organization and Chief Financial Officer will then identify variances to plan on a consolidated level and utilize the Partial Product Group Income Statements, as well as the other remaining individual results as needed, to assist in identifying the reasons for variances to consolidated results. These variances, as needed, are then communicated to the CODM in the Direct Reports Meeting.

This product group component financial information has significant limitations in its usefulness for the CODM to assess the Company's results and make critical resource allocation decisions including:

- Only a portion of the Company's consolidated results are represented by the product group component financial information, therefore it is impracticable for the CODM to make resource allocation decisions due to the fact that the financial results for a substantial portion of the Company's total results are not part of the product group component financial information.
 - The five product groups that present component financial information in the MBRs represented a total of 54% of external sales, 91% of research and development expenditures, and 42% of selling, general and administrative expenses. As enumerated to above, the MBRs are used to primarily review product group research and development efforts, quality and customer technical matters that in most cases will impact overall customer satisfaction across all of the product groups.
- Product Group Partial Income Statements include intercompany sales to the Company's international subsidiaries. Intercompany sales in 2011, for example, are, on average, 37% of total Product Group sales. The volume of these intercompany sales are driven by inventory replenishment requirements within these international subsidiaries and, therefore, do not correlate with current period external international customer sales. On average, the international subsidiaries day's sales in inventory are 60 days. Intercompany revenue in the Product Group Partial Income Statements are on an income tax basis and for a particular monthly period do not correlate with actual external sales and usually precede those sales by 60 days plus transit time thereby not reflecting the true economic results of the Product Group.

- Intercompany sales pricing included for the 37% of sales related to intercompany sales, is based upon U.S. Federal and applicable Foreign tax jurisdictional requirements (for example, Japan, South Korea, Singapore, People's Republic of China, Taiwan, Germany, U.K., etc.). Intercompany pricing is primarily dependent upon imputing taxable income in each country with respect to the economic functions and risks assumed by MKS Instruments, Inc. subsidiaries as defined by applicable tax regulations. Therefore, management relies upon consolidated results in order to obtain economic performance for this reason.
- These Partial Product Group Income Statements do not include transfer price adjustments (which are recorded in corporate), accounting revenue deferrals (SAB 104), global customer rebates and significant costs that are only recorded in the U.S. corporate and consolidating income statement. These costs include all management incentive compensation costs, stock compensation costs, certain fringe costs and other costs that relate to Product Group Vice President's and other employees working at a Product Group site.
- All or significant portions of line items in these Partial Product Group Income Statements are allocations and are managed centrally by the functional Vice President's including cost of goods sold overhead, sales expenses, patent expenses and most general and administrative expenses.
- The Company has foreign sales and service offices that sell and service all of the Company's products. These foreign sales operations do not consolidate into the product groups and financial information for the foreign subsidiaries by product is not regularly compiled, reported or consolidated. The financial information for the Company's foreign sales offices is consolidated by legal entity only and not regularly reviewed by the CODM as component information separate from the consolidated results review.

CODM process for assessing the business results and making critical resource allocation decisions

The CODM utilizes consolidated information to assess the business and make critical resource allocation decisions. Secondly, the CODM takes a customer centric view and utilizes bookings and sales information and trends for the company's major customers because the Company's top 10 customers represented 41% of 2011 sales and substantially all of the Company's products are sold to these major customers. In addition, the CODM reviews and assesses bookings and sales trend information for the semiconductor industry and the other non-semiconductor business.

Each quarter and annually, the Company sets consolidated targets for revenue, gross margin, operating expenses, earnings per share and capital expenditures. These consolidated targets are approved by the CODM and the BOD and the CODM manages to these consolidated targets, is held accountable for these consolidated targets and holds senior managers including Product Group Vice Presidents and functional Vice Presidents of the Company accountable for the consolidated targets. This accountability is aligned with management incentive compensation plans which are based solely on consolidated financial results (or in limited cases for country managers, country bookings and operating expense targets).

Once the targets are set, the CODM monitors results through reviews of weekly bookings and shipments flash reports (which provide weekly bookings and sales on a consolidated basis, on a regional totals basis, for key customers in total, by product group and for each of the foreign sales subsidiaries on a legal entity basis) and monthly and quarterly consolidated financial statements. If for example, the Company is varying from the quarterly target, the COO ("Chief Operating Officer") will first contact the responsible sales person or the Vice President of Sales and assess which customer or region is varying significantly from their current quarters commitments. The CODM will then assess bookings and sales by region and by industry (e.g. semiconductor vs. non semiconductor). Variances in shipments or gross margins are

addressed with the Vice President of Operations who has responsibility for the majority of manufacturing on a global basis. Research and development questions or assessments are discussed and reviewed with the Product Group Vice Presidents and any other variances in operating expenses are addressed with the functional Vice President's who have global responsibility for their respective function (manufacturing, service, sales, finance, human resources and quality).

Furthermore, the day following the product group MBRs, a CEO Direct Reports meeting is held with the CEO, COO, CFO, Vice President of Global Human Resources, Vice President and General Counsel and Senior Director of Business Development. A sample of the information presented at these meetings was provided to the Staff on February 24th in the binder tab labeled CEO Direct Reports Meeting. In this meeting, the consolidated financial results only, are reviewed along with a consolidated human resources review, a legal review and an operations review. Critical resource allocation decisions are made based upon these bookings and sales trend reports described above and the information presented in this CEO Direct Reports meeting.

The following examples describe how critical resource allocation decisions have been made by the CODM:

- During a significant downturn in the semiconductor industry which began in late 2008, the Company undertook significant headcount reductions and other restructuring actions. These headcount reductions and other restructuring activities were based on consolidated sales trends and expected consolidated sales trends. Headcount reductions were initiated across the Company on a pro-rata basis and by function commensurate with consolidated business levels with no consideration of product group results.
- As the industry recovered, in 2010, the Company added back staff strategically by function and commensurate with consolidated business levels. For example, critical functions such as quality added back headcount first irrespective of product group results.
- In 2011, the Company made a strategic decision to enhance local support direct to the Company's semiconductor device manufacturing customers (or semiconductor "fabs"). This decision required the Company to add application engineers and additional local service to support these fabs. The decision was customer centric and these additional personnel support all of the Company's product groups.

The CODM uses the consolidated financial information and takes a customer centric view of the business because of the following factors:

- A significant reliance on a few major customers in the semiconductor industry to which the Company sells the majority of its products.
 - In 2011, 41 % of sales were represented by the Company's top 10 customers and 64% of sales were to the semiconductor industry.
 - The Company sells products across all product groups to these customers, the products all support the same basic functions of measuring, controlling, monitoring and powering manufacturing processes for the semiconductor industry or other advanced manufacturing processes. In addition, many of the Company's products are integrated.
 - These customers evaluate the Company as one entity and hold the Company accountable for overall quality, shipment and other key performance metrics.
 - Positive or negative trends with a customer or in the semiconductor industry have a similar impact across the majority of the Company's product groups.

- The Company's largest customers have global sales agreements and have a single MKS sales person responsible for providing the customer with all products the Company sells.
- The Company's sales force is centrally managed and is organized by customer and/or by region. The same sales person generally sells all of the Company's products in a region or to a customer.
- The semiconductor industry is very volatile and difficult to forecast and predict. For example, in 2009 the Company's revenues decreased over 36% and then in 2010 revenues increased by 117%. The quarterly volatility is even more pronounced.
- Revenues from other markets which include solar cells, LED and thin film are derived from the same products that are sold to the semiconductor industry, using the same manufacturing sites and processes and are used for the same or similar purposes of controlling the manufacturing processes of wafer production.
- Due to the customer centric management approach and a focus on consolidated results, management incentive compensation plans are based on consolidated financial results.

Information provided to the Board of Directors

The information provided to the Company's BOD includes a quarterly financial presentation to the full BOD, quarterly presentations to the Audit and Compensation Committees of the BOD, and a Monthly Update Letter to the full BOD. The full BOD presentations, the Audit Committee presentations and monthly BOD update letters include historical and forecasted financial information on a consolidated basis only.

In addition, at the February annual BOD meeting, Product Group Senior Vice Presidents present to the BOD information on the products for which they have responsibility for product research and development efforts. This information includes general information describing the technical aspects of the products and their functions, information on product market share and the total addressable market of the products and historical and forecasted Partial Product Group Income Statements. The product group Vice Presidents also present their goals for the upcoming year which include product development and revenue goals. The BOD uses this information to assess revenue growth opportunities for the Company. The total of this product group information does not equal the total consolidated results of the Company (as enumerated to above, the product group's represent 54% of external sales) and this information is not regularly reviewed by the BOD (only presented once per year or on an ad-hoc basis). At this same February BOD meeting, the CEO and CFO present consolidated financial results and a consolidated Plan or budget, which the BOD uses to set management incentive compensation targets.

The BOD then holds management accountable for these consolidated results throughout the year.

Disclosures

The Company strives to provide investors with meaningful and complete disclosures in all of its public filings, earnings calls and other public announcements. The Company currently provides sales by market, sales by groups of similar products, sales by geography, sales percentages to major customers, sales and gross margin by product and service revenue and any other information that is either required to provide or the Company believes enhances the usefulness to the users of the Company's financial information.

The Company provides total world-wide sales information for each group of similar products in Note 22, on page 67 of its Form 10-K, following the guidance in ASC 280-10-50-40. This information is compiled from various accounting systems at quarter end for reporting purposes and is not produced or reviewed as part of the information utilized regularly by the CODM. The Company has combined similar products into reported groups of products (Instruments and Control Systems, Power and Reactive Gas Products and Vacuum and Other Products) based upon the similarity of the product function, type of product and manufacturing site.

The Company believes it has provided all material information used by the CODM to make critical resource decisions and assess results to the readers of the financial statements. In addition, when the CEO and CFO discuss the Company's results on investor calls, the business results are explained on a consolidated basis and in terms of sales trends by market, customer and geography.

If the Company were to present its product group component financial information (for the five product groups) as segments, as noted above, the total of these product groups' external sales equals only 54% of consolidated external sales of the Company. Even if all of the product group information was aggregated in accordance with ASC 280-10-50-11, external sales still represents the 54% of consolidated external sales. This would leave all financial information related to the Company's foreign sales and service centers (and some manufacturing sites), corporate information, unallocated expenses and eliminations as a separate reconciling item to arrive at the total consolidated amounts. ASC 280-10-50-14, states external revenue reported by reported operating segments must equal no less than 75% of total consolidated external revenue. As noted above, the CODM does not regularly review or assess component financial information for the pieces of this reconciling item. This information is reviewed as part of the consolidated financial review.

2. Please tell us whether the information you provided included all of the information related to October 17, 2011, or just one of the financial reviews.

Company Response

The information provided to the staff on February 24th related to the October 17, 2011 management business review ("MBR") was a sample of the information presented at this MBR and our typical MBR. The sample provided was for just one of the financial reviews; for the ENI product group. The same or similar financial information is presented in the MBR for each of the following product groups:

- Power and Reactive Gas Products (with sub-groups as follows):
 - ASTeX Products
 - ENI Products
- Analytical Solutions Group
- PFM&C Products
- HPS Products

As described above, this component financial information has significant limitations including that the total of all of these product group's only represents 54% of consolidated external sales. Accordingly, its usefulness for the CODM to assess the business and make critical resource allocation decisions is severely limited.

The financial results for the Company's foreign sales and service subsidiaries, certain other foreign manufacturing sites and corporate are not reviewed in these monthly business review meetings. These results are not regularly reviewed by the CODM separately but rather during the consolidated financial results review as part of the CEO direct reports meeting held one day after the monthly business review meetings. In the case of the October 17th meetings, the consolidated results were reviewed on October 18th, and the information presented in that CEO direct reports meeting was provided to the staff on February 24th in the tab of the binder labeled CEO Direct Reports Meeting.

3. Please explain the composition of the five product groups for which you perform the financial reviews and how these groups relate to the three product groups – Instruments and Control Systems, Power and Reactive Gas Products, and Vacuum Products - disclosed on page 75 of this Form 10-K. In addition, please explain to us how these five product groups as well as the three product groups discussed in your Form 10-K relate to the corporate divisions or business/product groupings disclosed on your website at <http://www.mksinst.com/contact/CorpDirectory.aspx>.

Company Response

The five product groups that present financial information in the MBR as described in 2 above, are listed below beneath the three reported product groups in which their products are grouped in the Company's disclosure on page 75 of its 2010 Form 10-K:

1. Instruments and Control Systems Products, which consists of the following:

<u>Product Groups</u>	<u>Vice-President</u>
PFMC Product Group	John T.C. Lee
Analytical Systems Group	John A. Smith

2. Power and Reactive Gas Products, which consists of the following:

<u>Product Groups</u>	<u>Vice-President</u>
ENI Product Group	Paul M. Eyerman
ASTeX Product Group	Paul A. Loomis

3. Vacuum Products and Other Products, which consists of the following:

<u>Product Groups</u>	<u>Vice-President</u>
HPS Products Group	William D. Stewart (retired March 31, 2012) ¹

¹ The new General Manager of the HPS Products Group reports to John T.C. Lee (and not directly to the CODM) due to the similarity of the customers, products and integration efforts.

As noted above, the Company provides total world-wide sales information for each group of similar products in Note 22, on page 67 of its Form 10-K, following the guidance in ASC 280-10-50-40. This

information is compiled from various accounting systems at quarter end for reporting purposes and is not produced or reviewed as part of the information utilized regularly by the CODM to assess results. The Company has combined similar products into reported groups of products (Instruments and Control Systems, Power and Reactive Gas Products and Vacuum and Other Products) based upon the similarity of the product function, type of product and manufacturing site. The Company does not compile cost information, gross margin information or operating profit information on a world-wide basis for these three reported groups of products.

The Company lists on its website at <http://www.mksinst.com/contact/CorpDirectory> its research and development sites. Also at the bottom at the site, the Company has country flags that link to the contact information for each of the Company's foreign sales subsidiaries (in local language). The intent of this website page is to provide customers and potential customers with contact information for sales, service, and development. The site does not list all of the Company's manufacturing sites (including ones for example like Mexico which manufactures for many of the Company's product groups).

The following table shows which Product Group and Reported group of products each listed site is included within:

<u>Site as listed on web-site</u>	<u>Product Group</u>	<u>Reported Group of Products</u>
MKS Astex Products	Astex Products Group	Power and Reactive Gas
MKS Astex GmbH	Astex Products Group	Power and Reactive Gas
MKS ENI Products	ENI Products Group	Power and Reactive Gas
MKS Medical Electronics	ENI Products Group	Power and Reactive Gas
MKS Pressure Measurement and Control Products	PFM&C Product Group	Instruments and Control Systems
MKS Calibration and Service Products	Service for Astex and ENI	Power and Reactive Gas
MKS On-Line Products	ASG Product Group	Instruments and Control Systems
MKS Gas Analysis Spectra Products USA	ASG Product Group	Instruments and Control Systems
MKS Gas Analysis Spectra Products UK & Asia	ASG Product Group	Instruments and Control Systems
MKS Control & Information Technology Products	Sales office across all products	
MKS HPS Products	HPS Product Group	Vacuum and Other Products
MKS Denmark ApS	HPS Product Group	Vacuum and Other Products
Telvac Engineering, Ltd.	ASG Product Group	Instruments and Control Systems

* * *

As per your request, the Company hereby acknowledges the following:

- the Company is responsible for the adequacy and accuracy of the disclosures in the filing;
- Staff comments or changes to disclosures 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.

Please do not hesitate to contact me at (978) 645-5578 or Kathleen F. Burke, Vice President and General Counsel at (978) 645-5574 should you have any further questions or comments.

Sincerely,

/s/ Seth H. Bagshaw

Seth H. Bagshaw
Vice President, Chief Financial Officer & Treasurer