



DIVISION OF
CORPORATION FINANCE

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

March 5, 2013

Via E-Mail

Ms. Elisha W. Finney
Executive Vice President, Finance
and Chief Financial Officer
Varian Medical Systems, Inc.
3100 Hansen Way
Palo Alto, California 94304-1030

Re: Varian Medical Systems, Inc.
Form 10-K for the fiscal year ended September 28, 2012
Filed November 21, 2012
File No. 001-07598

Dear Ms. Finney:

We have limited our review to only your financial statements and related disclosures and do not intend to expand our review to other portions of your documents. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter within ten business days by providing the requested information, or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances, please tell us why in your response.

After reviewing the information you provide in response to these comments, we may have additional comments.

Form 10-K for the fiscal year ended September 28, 2012

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, page 57

Net Orders, page 72

1. We noted your disclosure and analysis of total net orders. Please explain to us and revise future filings to disclose how these amounts were calculated. Additionally, please tell us your consideration as to whether the amounts labeled "net orders" are non-GAAP

disclosures and subject to the disclosure requirements set forth in Item 10(e) of Regulation S-K.

Item 8. Financial Statements and Supplementary Data, page 86

Notes to Consolidated Financial Statements, page 90

Note 10- Commitments and Contingencies, page 113

Other Matters, page 117

2. We noted your disclosures regarding legal matters outstanding with the University of Pittsburgh and the significance of the related December 21, 2011 patent infringement judgment against the company. We further noted that as of September 28, 2012 your legal accrual for this and other matters was approximately \$5.7 million. Please explain the significant factors you considered in determining that the amount of your accrual, including amounts associated with the University of Pittsburgh contingency, was reasonable under the circumstances.
3. Additionally, we noted in connection with the judgment referenced above that the court ordered the company to pay ongoing royalties at the rates found by the jury for sales after the date of judgment. If material, please revise future filings to disclose the revised royalty rate as well as your estimate of the probable or reasonably likely future royalties you will be required to pay as a result of the judgment.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Exchange Act of 1934 and all applicable Exchange Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In responding to our comments, please provide a written statement from the company acknowledging that:

- 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 staff 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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You may contact Eric Atallah, Staff Accountant at (202) 551-3663 or Jay Webb, Reviewing Accountant, at (202) 551-3603 if you have questions regarding these comments. In this regard, do not hesitate to contact me at (202) 551-3643 with any other questions.

Sincerely,

/s/ Jay Webb “for”

Kevin L. Vaughn
Accounting Branch Chief