



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

Mail Stop 3030

December 23, 2008

Via Facsimile and U.S. Mail

Ms. Elisha Finney
Chief Financial Officer
Varian Medical Systems, Inc.
3100 Hansen Way
Palo Alto, CA 94304

**Re: Varian Medical Systems, Inc.
Form 10-K for the Year Ended September 26, 2008
Filed November 24, 2008
File No. 001-07598**

Dear Ms. Finney:

We have reviewed your filing and have the following comments. We have limited our review to only your financial statements and related disclosures and will make no further review of your documents. Where indicated, we think you should revise your documents in future filings in response to these comments. If you disagree, we will consider your explanation as to why our comments are inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Form 10-K for the Year Ended September 26, 2008

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, page 56

Liquidity and Capital Resources, page 72

1. With respect to your contractual obligations table on page 77, we note that you exclude your benefit payments to participants and contributions to be made under your defined benefit pension plans and your post-retirement plans. Please address the following:
 - Please explain to us why you do not believe these amounts are required to be included in the contractual obligations table.
 - To the extent that you continue to not be able to reasonably estimate the future payments for the above-referenced items, please revise future filings to disclose, at a minimum, the total amounts of the related obligations within your contractual obligation table.

Item 8. Financial Statements and Supplementary Data, page 85

Note 1. Summary of Significant Accounting Policies, page 89

-Revenue Recognition, page 92

2. We note your reference to sales discounts and rebates on page 35. As applicable, please revise future filings to disclose the nature of any discounts, rebates or other sales incentives you offer your customers. Please also revise future filings to disclose how any sales incentives impact your revenue recognition.

Form 8-K Dated October 23, 2008

3. We note that you refer to your non-GAAP measure as "pro forma" earnings per share from continuing operations. The pro forma terminology has very specific meaning in accounting literature, as indicated by Article 11 of Regulation S-X. In future filings, please revise your presentation to omit the pro forma terminology when referring to your non-GAAP measures.

As appropriate, please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a cover letter that keys your responses to our comment and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your responses to our comments.

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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 all information required under the Securities Exchange Act of 1934 and that they have provided all information investors require for an informed investment decision. 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 connection with responding to our comments, please provide, in writing, a 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.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in our review of your filing or in response to our comments on your filing.

You may contact Tara Harkins, Staff Accountant, at (202) 551-3639 or me at (202) 551-3643 if you have questions regarding these comments. In this regard, do not hesitate to contact Martin James, Senior Assistant Chief Accountant, at (202) 551-3671.

Sincerely,

Kevin L. Vaughn
Accounting Branch Chief