



DIVISION OF
CORPORATION FINANCE

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

May 2, 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 completed our review of your filing. We remind you that our comments or changes to disclosure in response to our comments do not foreclose the Commission from taking any action with respect to the company or 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. 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 rules require.

Sincerely,

/s/ Brian Cascio for

Kevin L. Vaughn
Accounting Branch Chief