



DIVISION OF
CORPORATION FINANCE

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

June 29, 2010

VIA U.S. Mail and Facsimile

Ms. Julie A. Piton
Vice President, Finance and Administration and Chief Financial Officer
AtriCure, Inc.
6217 Centre Park Drive
West Chester, OH 45069

Re: AtriCure, Inc.
Form 10-K for the fiscal year ended December 31, 2009
Filed March 30, 2010
Form 10-Q for the quarterly period ended March 31, 2010
File No. 000-51470

Dear Ms. Piton:

We have reviewed your filings and have the following comments. 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 December 31, 2009

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

Revenues, page 42

1. In future filings please more fully describe the material factors contributing to significant changes in revenues as referred to in your disclosure. In that regard:
 - Please clarify the underlying factors responsible for the decrease in domestic sales of minimally invasive products, and, to the extent material to an understanding of the variance, please connect the discussion to specific products described in Item 1 Business;
 - Please describe and quantify the impact on sales of the ORLab system referred to in the fourth sentence of the disclosure and describe reasons for changes in reported amounts from period-to-period, and;
 - Describe reasons for growth in international sales.

In general, the discussion of revenues should describe the underlying business reasons for factors cited as responsible for material changes in revenues, such as changes arising from varying demand, changing prices, new products, new markets and other significant matters. Please refer to Item 303(a)(3) of Regulation S-K and Securities Act Release 33-8350, Interpretation: Commission Guidance Regarding Management's Discussion and Analysis of Financial Condition and Results of Operations.

Selling, general and administrative expenses, page 43

2. We see the significance of lower sales force headcount on operating expenses. In future filings please describe the underlying business reasons for the decrease in headcount and quantify the number of positions eliminated. Also, clarify the expected impact on your business. In general the discussion of results of operations should not only identify and quantify factors responsible for material changes in financial statement items, but also describe the underlying business reasons for the factors cited.

Liquidity and Capital Resources, page 45

3. We note that your discussion of cash flows from operating activities is primarily a narrative recitation of the cash flow statement. The discussion of cash flows from operating activities should describe the primary drivers of and other material factors necessary to convey an understanding of cash flows, describe the indicative value of historical cash flows, and describe the underlying business reasons for changes in operating cash flows from period-to-period. Please

appropriately revise in future filings. For guidance please refer to the Securities Act Release 33-8350, Interpretation: Commission Guidance Regarding Management's Discussion and Analysis of Financial Condition and Results of Operations.

4. In future filings please include a description of material credit facility covenants, events of defaults and remedies. Please also definitively disclose whether you are in compliance with covenants as of the period end.

Item 8. Financial Statements and Supplementary Data

Note 1. Description of Business and Summary of Significant Accounting Policies

Revenue Recognition, page 60

5. We see that your international sales are generated through distributors. You disclose that terms of sale are generally consistent between direct sales and distributor sales, with the exception of providing distributors extended payment terms. However, please tell us about any supplemental programs you have for distributors such as price protection arrangements and rights of return or exchange and the impact of these matters on the timing of revenue recognition.

Sales Returns and Allowances, page 60

6. We note you estimate your sales returns and allowances on a specific identification basis. Please tell us in more detail how you estimate the reserve on a specific identification basis. Also, tell us when you record the reserve estimate (i.e. at the time of the sale or some future date) in relation to the related sales.

Property and Equipment, page 61

7. In future filings please also disclose the carrying amount of loaner equipment included in property and equipment as of each balance sheet date. Please also avoid using undefined abbreviations (such as ASB) in the notes to financial statements.
8. We see that you loan certain equipment such as your AtriCure Switch Box to direct customers and sell similar equipment to your distributors. With respect to the loaner equipment, please respond to the following:
 - Please tell us how you account for sales of equipment to distributors and the basis in the literature for the accounting.
 - With respect to loaner equipment, please tell us the terms and conditions of the loan, the typical length of the loan and whether the surgical tools are useable absent the loaned equipment. Also, explain how you assessed

whether revenue should be allocated to the loan and use of equipment provided to purchasers of your surgical tools and tell us the basis in the FASB Codification for your view.

Share-Based Employee Compensation, page 63

9. In the second paragraph on page 64, you disclose that you are accounting for certain non-employee stock options as free-standing derivatives classified as liabilities. In future filings, please describe the terms of the contracts leading you to determine that the option arrangements are derivatives under FASB Codification Topic 815. Please show us proposed revised disclosure.
10. With respect to the warrant issued with the \$6.5 million term loan, please tell us how you applied the literature cited in your disclosure in concluding that intrinsic value accounting was appropriate. Please also describe the features of the instrument on which you based your determination.
11. As a related matter, we note your disclosure that the warrant arrangement “met the requirements of ASC 815 and other relevant literature and, therefore, the warrant was recorded at its grant date intrinsic value and is classified as an equity transaction.” Unexplained references to the FASB Codification are not likely to be meaningful to investors. While you may elect to provide references to the FASB Codification, your disclosure should describe the substance of your accounting practices, including factual disclosure sufficient to describe the underlying basis in the literature for accounting determinations.

Note 10. Commitments and Contingencies, page 72

Class Action Lawsuit, page 73

12. Please tell us where the \$2 million receivable from the insurance company is recorded in your balance sheet. Please also describe to us the basis for your conclusion that recovery from the insurance company is probable.

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.

Ms. Julie A. Pitton
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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.

You may contact Leigh Ann Schultz at (202) 551-3628 or me at (202) 551-3605 if you have questions regarding these comments. In this regard, please do not hesitate to contact Brian Cascio, Accounting Branch Chief, at (202) 551-3676 with any other questions.

Sincerely,

Gary Todd
Accounting Reviewer