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July 28, 2010

Via Edgar

Mr. Gary Todd
Division of Corporation Finance
Securities and Exchange Commission
100 F Street, N.E.
Washington, DC 20549

Re: AtriCure, Inc. ("AtriCure")
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 Mr. Todd:

We are responding to the Staff's comments contained in the letter dated June 29, 2010 to the above-referenced filings. We spoke with the Staff on June 30, 2010 and requested additional time to respond to the letter dated June 29, 2010 and the Staff has allowed an additional ten business days for our response, which is now due on July 28, 2010.

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;*
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- *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.

In future filings, we will describe the underlying business reasons for factors cited as responsible for material changes in our revenues, including but not limited to, changes arising from varying demand, changing prices, new products and new markets. To the extent they are material in future periods, we will clarify the underlying factors responsible for the change in sales of minimally invasive products and will connect the discussion to our specific products described in Item 1 Business in our Form 10-K. In future filings, we will also describe and quantify the impact on sales of the ORLab system to the extent they are material and we will describe the reasons for changes in the reported amounts from period-to-period to the extent they are material. We will also disclose in future filings the reasons for material changes in our international sales.

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.*

In future filings, we will clarify the expected impact on our business of material headcount changes. In general, we will not only identify and quantify the factors responsible for material changes in our financial statement items, but we will also describe the underlying business reasons for the factors cited. Additionally, we will disclose in future filings the underlying business reasons for material changes in our headcount and quantify the number of positions we eliminated.

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.***

In future filings, our discussion of cash flows from operating activities will include a description of the primary drivers of and other material factors necessary to convey an understanding of cash flows, specifically describing the indicative value of historical cash flows and the underlying business reasons for material changes in operating cash flows from period-to-period.

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.***

In future filings, we will include a description of our material credit facility covenants as well as events of defaults and remedies, if any. In addition, we will definitively disclose whether we are in compliance with our covenants as of the period end in future filings.

Item 8. Financial Statements and Supplementary Data

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

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.***

In accordance with FASB Accounting Standards Codification ("ASC") 605-15-25 and 605-10-S99, we recognize revenue when it is realized or realizable and earned. This occurs when persuasive evidence of an arrangement exists, delivery has occurred, the price is fixed or determinable, the buyer is obligated to pay us (i.e., not contingent on a future event), the risk of loss is transferred, there is no obligation of future performance, collectability is reasonably assured and the amount of future returns can reasonably be estimated. With regards to the Company's customers (including distributors), those criteria are met when title passes. We have concluded that our shipments to distributors represent revenue transactions, and are not on consignment.

Our standard sales terms for our distributors are set forth on our invoices. Our sales terms are uniform across our sales to distributors and end users. We do not offer any different contract terms for sales to distributors as opposed to end users and the price to be paid by the buyer in each case is fixed and determinable. Sales terms are consistent for both end users and distributors, with the exception of payment terms, which are generally net 30 days for end-users and net 60 days for distributors.

We have also considered the following factors to conclude that our shipments to distributors represent revenue transactions, not inventory consignment transactions:

- Ø Our experience with our distributors is that they are adequately capitalized.
- Ø We do not transfer merchandise between our distributors subsequent to the original sale to the initial distributor.
- Ø We do not take an active interest in the internal management of our distributors.
- Ø We have not experienced historical issues with our distributor's ability to pay for or sell previously delivered products.
- Ø We do not finance the sale with our distributors.
- Ø We do not offer any volume based incentives to our distributors.
- Ø Our sales price ultimately received is not contingent upon the amount the distributor receives when the product is resold.
- Ø Our distributors have historically paid for the merchandise purchased whether or not it has been resold to a third party.
- Ø Legal transfer of title passes to the distributor when the product is shipped to the distributor.

We generally do not provide sales discounts. Additionally, we do not offer any supplemental programs for distributors such as price protection arrangements. The sales price indicated and the payment of the invoice are not conditioned on the distributors' resale of the product to the end user. We only accept product returns in limited situations, primarily defective material or errors made in fulfilling what was ordered (i.e. wrong product or incorrect quantity). Total returns during the year ended December 31, 2009 were \$0.2 million.

[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.***
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We account for our returns and allowances in accordance with ASC 605-15-25 "Revenue Recognition - Products," which specifically addresses the ability to make a reasonable estimate of future returns. This guidance recognizes that the ability to make a reasonable estimate is dependent on many factors and circumstances, including but not limited to, the availability of historical experience with similar types of sales of similar products and the frequency at which relatively homogeneous transactions occur. Historically, product returns for sales of our products only occur when (1) the product is defective, or (2) shipped quantities or product are incorrect. As noted in the response to Comment No. 5 above, total returns were \$0.2 million for the year ended December 31, 2009, or approximately 0.4% of total revenues. Due to the insignificant nature of our total product returns, we believe that our calculated returns reserve liability as of December 31, 2009 was materially accurate.

We record the sales returns and allowances reserve on a specific identification basis quarterly by recording a reserve equal to known returns that have been communicated to and processed through our customer service department prior to period end or after period end but before the quarterly consolidated financial statement are issued, regardless of whether product to be returned has been received. An estimated reserve for sales returns and allowances is not recorded based upon historical experience due to the infrequent and immaterial nature of our returns.

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.

In future filings, we will disclose the carrying amount of loaner equipment included in property and equipment as of each balance sheet date. In addition, we will avoid using undefined abbreviations in the notes to our 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.**

As discussed above in our response to Comment No. 5, in accordance with FASB Accounting Standards Codification ("ASC") 605-15-25 and 605-10-S99, we recognize revenue when it is realized or realizable and earned. This occurs when persuasive evidence of an arrangement exists, delivery has occurred, the price is fixed or determinable, the buyer is obligated to pay us (i.e., not contingent on a future event), the risk of loss is transferred, there is no obligation of future performance, collectability is reasonably assured and the amount of future returns can reasonably be estimated.

We sell our equipment to distributors in our International markets. We do not typically sell our equipment to end user customers domestically in the U.S. Our handpieces are not usable on competitor generators and our generators are not usable with our competitor handpieces. Therefore, since the customer needs the combination of the generator and the handpieces to have a functional system, we believe that the generator and initial complement of handpieces sold are considered a single unit of accounting under ASC 605-25-25 because neither the equipment nor handpieces have value to the customer on a standalone basis.

Sales of generators to our distributors were approximately \$1.4 million during 2009, which represented approximately 2.5% of our total revenues.

- ***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.***

For customers in the U.S., we enter into a placement agreement (an "Agreement") for loaner equipment transactions. The Agreement outlines that the customer will be provided certain equipment (i.e. a portable generator) at no charge for use with our handpieces. The Company retains title to the equipment and reserves the right to remove the equipment from the customer location if the customer is no longer continuing to use the handpieces on a regular basis (i.e. the Company can remove the equipment even after a single use). Additionally, there is no stated term of use (i.e. months, years) in the Agreement. The Agreement is generally signed prior to shipment of the equipment and requires that the customer sign a consent acknowledging that the equipment is on loan with the customer and that the customer cannot resell, lease, or transfer the right of use for the equipment while on loan. Further, the equipment is tagged with an AtriCure asset tag that is placed in a visible location on the equipment. AtriCure continues to be responsible for any service requirements for the equipment while on loan with customers and carries the insurance on the equipment while on loan with the customer. The practice of loaning such equipment for use with our products is a common industry practice.

Our pricing for handpieces is consistent between customers, and we do not sell an initial complement of handpieces at a different price than replacement handpieces. The customer is not required to commit, contractually or otherwise, to purchase a minimum (or predetermined) number of handpieces in connection with receiving the loaned equipment. Even though the equipment is provided for “free,” ASC 605-50, “Accounting for Consideration Given by a Vendor to a Customer (Including a Reseller of the Vendor’s Products)” (“ASC 605-50”), indicates that it is still deemed to be a deliverable. The customer’s right to use the equipment for “free” is not a vendor offer based on cumulative sales levels or the length of time a customer has been with the Company.

Therefore, we have followed the guidance in ASC 605-25-25 to determine the appropriate units of accounting for the equipment and handpiece deliverables.

Our handpieces are not usable on competitor generators and our generators are not usable with our competitor handpieces. Therefore, since the customer needs the combination of the generator and the handpieces to have a functional system, we believe that the generator loaned and initial complement of handpieces sold are considered a single unit of accounting under ASC 605-25-25 because neither the equipment nor handpieces have value to the customer on a standalone basis.

Since the customer is not required to commit, contractually or otherwise, to purchase a minimum (or predetermined) number of handpieces in connection with receiving the generator, the earnings process is considered to be completed when the customer has the generator and we have shipped the initial complement of handpieces. Because the customer needs both the generator and the handpiece to have a functional system, revenue is recognized upon the later of delivery of the generator or handpieces. Therefore, we recognize revenue when it is realized or realizable and earned in accordance with ASC 605-15-25 and 605-10-S99.

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.

In future filings, we will describe the terms of our non-employee stock options contracts leading us to determine that our non-employee stock option arrangements are derivatives under FASB Codification Topic 815, and therefore accounted for as free-standing derivatives classified as liabilities. Our proposed revised disclosure is as follows:

The Company has historically issued stock options to non-employee consultants as a form of compensation for services provided to the Company. Once these non-employee options have vested, the awards no longer fall within the scope of ASC 718. Because the options require settlement by the Company's delivery of registered shares and because the tax withholding provisions in the awards allow the options to be partially net-cash settled, these vested options are no longer eligible for equity classification and are, thus, accounted for as derivative liabilities under FASB ASC 815 until the awards are ultimately either exercised or forfeited. Accordingly, the vested non-employee options are classified as liabilities and remeasured at fair value through earnings at each reporting period.

The Company recorded (expense) income as a result of the re-measurement of the fair value of these awards during 2009, 2008, and 2007 of (\$140,620), \$522,992 and (\$227,421), respectively. As of December 31, 2009 and 2008, respectively, options to acquire 52,359 and 54,660 shares of common stock held by non-employee consultants remained unexercised and liabilities of \$180,288 and \$40,368, respectively, were included in accrued liabilities in the Consolidated Balance Sheets.

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.

Our warrant issued with our \$6.5 million term loan is legally detachable and separately exercisable from our debt agreement with Silicon Valley Bank ("SVB") and was classified within equity at inception in accordance with ASC 815-40, "*Derivatives and Hedging - Contracts in Entity's Own Equity*."

ASC 470-20, "Debt- Debt with Conversion and Other Options," requires that the proceeds of debt with detachable warrants be allocated between the two instruments on a relative fair value basis. This requires separate determination of the fair value of the detachable warrants and the fair value of the debt instrument without the warrants as of the date of issuance.

In applying ASC 740-20, at the time of issuance, we allocated \$6,045,003 of proceeds to the debt and \$454,997 of proceeds to the warrants.

Our previous disclosure indicating that the warrant was recorded as a discount on long-term debt at its intrinsic value was made out of context. In future filings, we will clarify our disclosure to state that the proceeds from the issuance of the debt and warrants were allocated based on the relative fair values of these two separate instruments, and we will remove any references to intrinsic value. Our revised disclosure is detailed below in our response to Comment No. 11.

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.

Please refer to our response to Comment No. 10 above. In addition, in future filings we will include the following disclosure:

In connection with our \$6.5 million term loan, we issued a warrant to purchase shares of our common stock. The warrant, which was legally detachable and separately exercisable from the debt agreement, allowed Silicon Valley Bank (“SVB”) to purchase 371,732 shares of our common stock at \$1.224 per share, exercisable for a term of 10 years. The warrant was immediately exercisable and was subsequently exercised by SVB on October 6, 2009 through a net share settlement transaction in which 276,143 shares were issued. Upon issuance of the term loan and the warrant, the Company allocated the related proceeds between these two financial instruments based on their relative fair values in accordance with ASC 470. Proceeds of \$454,997 were allocated to the warrant and recorded as additional paid-in capital, and the remaining proceeds of \$6,045,003 were recorded as the initial net carrying value of the debt.

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.

The \$2 million receivable from the insurance company was recorded as a component of other current assets within the consolidated balance sheet. We maintain insurance, including directors and officer’s (“D&O”) insurance coverage for the Company. The insurance provider has been and continues to be actively involved with the proposed settlement negotiations with the plaintiffs and has provided written evidence to us that the insurance provider will provide coverage under the D&O policy up to \$2 million related to the litigation, subject solely to a reservation of rights clause that the plaintiffs prove actual losses up to \$2 million (i.e., if the plaintiffs can only substantiate \$1 million of actual losses, the coverage under the D&O policy would be limited to \$1 million, however, if actual damages by the plaintiffs exceed \$2 million, the insurance provider has capped its coverage at \$2 million). The proposed settlement agreement between AtriCure and the plaintiffs is contingent on payment by the insurance provider under the D&O policy. If for any reason the insurance provider fails to pay, the proposed settlement agreement becomes null and void. The reservation of rights clause contained in the proposed settlement agreement between us and the plaintiffs mirrors the reservation of rights clause between the insurance provider and AtriCure such that the liability ultimately agreed to by us will be capped at \$2 million and could be less depending on the plaintiff’s ability to prove actual damages. As a settlement offer has been made for this class action matter, we concluded that a contingent liability of \$2 million had been incurred under ASC 405 “Liabilities” because both of the following criteria were met: (a) information available prior to issuance of the financial statements indicated that it was probable that a liability had been incurred at the date of the financial statements and (b) the amount of loss was probable and estimable.

Although payment by the insurance provider subject to the proposed settlement would be paid directly from the insurance provider to the plaintiffs on behalf of AtriCure, we determined that we had not legally transferred the contingent liability to the insurance carrier and therefore recorded the contingent liability once the conditions for accrual were established (i.e. we concluded AtriCure was the primary obligor for the proposed settlement agreement and was not acting as an agent for the insurance carrier).

While the liability associated with the proposed settlement agreement was independently determined from any potential claim for recovery from insurance, as noted above, the settlement offer is conditioned upon insurance recovery and the insurance carrier has stipulated to insurance coverage in an amount up to the proposed settlement amount. As such, we concluded the recovery under its D&O policy with the insurance provider was probable and should be evaluated as a loss recovery under ASC 410-30 (formerly SOP 96-1). Our assessment following a loss recovery model is analogous to the loss recovery model described in ASC 410-30-35 (formerly paragraph 140 of SOP 96-1) and ASC 605-45 (formerly paragraph 16 of EITF 01-10). Consequently, we recorded a \$2 million insurance recovery receivable within other current assets which represents the amount of actual loss recognized in our consolidated financial statements related to the proposed settlement agreement and deemed probable of recovery.

In future filings we will include the following disclosure:

We have recorded a \$2.0 million liability within accrued liabilities on our consolidated balance sheets, of which we expect to recover all of that loss through an insurance claim. As such, we have recorded a \$2.0 million asset within other current assets, which represents the amount considered probable of recovery from the insurance claim.

In responding to the Staff's comments, AtriCure acknowledges that:

- AtriCure is responsible for the adequacy and accuracy of the disclosure in its filings;
- 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
- AtriCure 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.

If you have any questions or comments, please do not hesitate to contact me.

Sincerely,

ATRICURE, INC.

By: /s/ Julie A. Piton

Julie A. Piton
Vice President Finance and Administration and Chief
Financial Officer

cc: Ms. Leigh Ann Schultz, Securities and Exchange Commission
Mr. Brian Cascio, Securities and Exchange Commission