



DIVISION OF
CORPORATION FINANCE

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

Mail Stop 3030

April 20, 2009

VIA U.S. Mail and Facsimile 425-402-2020

Mr. Dave Marver
Chief Executive Officer
Cardiac Science Corporation
3303 Monte Villa Parkway
Bothell, WA 98021

Re: Cardiac Science Corporation
Form 10-K for the Fiscal Year Ended December 31, 2008
Filed March 16, 2009
File No. 000-51512

Dear Mr. Marver:

We have reviewed your filings and have the following comments. Where indicated, we think you should revise your future filings in response to these comments. If you disagree, we will consider your explanation as to why our comment is 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 Fiscal Year Ended December 31, 2008

Item 1. Business, page 2

Broaden our distribution, page 9

1. We note from your other disclosure and from reading the agreement filed as Exhibit 10.43 to your filing that General Electric and Nihon Kohden distribute your products under their respective brand names. Please make those arrangements clear throughout your future filings as applicable.

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 33

Critical Accounting Policies and Estimates, page 34

2. In the interest of providing readers with a better insight into management's judgments into accounting for goodwill, please tell us and consider disclosing the following in future filings:
 - Each of the valuation methodologies used to value goodwill, including sufficient information to enable a reader to understand how each of the methods used differ, the assumed benefits of a valuation prepared under each method, and why management selected these methods as being the most meaningful for the company in preparing the goodwill impairment analyses.
 - If multiple approaches are used, explain how you weight each of the methods used and the basis for that weighting.
 - A qualitative and quantitative description of the material assumptions used and a sensitivity analysis of those assumptions based upon reasonably likely changes.
 - If applicable, discuss how the assumptions and methodologies used for valuing goodwill in the current year have changed since the prior year highlighting the impact of any changes.
3. We note that you regularly perform a detailed analysis of your inventories. Please tell us and in future filings disclose how often you perform the analysis.

Financial Statements, page 46

Management's Report on Internal Control Over Financial Reporting, page 47

4. We note that you conducted your December 31, 2008 evaluation of internal control over financial reporting based on the COSO framework as of December 31, 2007. Please tell us why you include a reference to the date of the COSO framework, especially considering that date is one year prior to the date of your evaluation.

Consolidated Statements of Cash Flows, page 53

5. Please reconcile the proceeds from exercise of stock options and issuance of shares under employee stock purchase plan with your consolidated statements of shareholders' equity on page 52.

Note 1. Summary of Significant Accounting Policies, page 54

Accounting for Licensing Income and Litigation Settlement, page 62

6. We note that during the second quarter of fiscal 2007 you entered into a settlement with Philips whereby you each dismissed all pending claims between the parties in consideration for cross-licenses of certain patents between the parties and a \$1 million payment from you to Philips. You state that you accounted for the transaction under SFAS 153 and determined the fair values of the licenses based upon estimated future royalty streams. Please tell us how you determined that the exchange had commercial substance in accordance with paragraph 1 of SFAS 153 and amended paragraph 21 of APB 29.
7. Further, please tell us the nature of the patents that were cross-licensed, how the company has and will use these patents and the significant assumptions underlying your fair value calculations.

Note 2. Segment Reporting, page 64

8. Please provide us with your analysis of how you determined your reportable segment under SFAS 131. Specifically discuss the nature and type of information that is reviewed by your CODM. If the CODM uses more than one set of segment information, discuss the other factors you used to identify a single set of components as constituting your operating segments, including the nature of the business activities of each component, the existence of managers responsible for them, and information presented to the board of directors, consistent with paragraph 13. Also, as applicable, discuss how the aggregation criteria in paragraph 17 of SFAS 131, including the economic criteria, were met and how it

was determined that only one reportable segment exists. Relate your response to the information regarding the revenues and gross profit of your defibrillation products and cardiac monitoring products on pages 40 - 41. Please also refer to Questions 7 and 8 of FASB Staff Implementation Guidance on SFAS 131.

9. Further, if true, please revise future filings to clearly state that you aggregate your operating segments.

Note 3. Restructuring Costs, page 65

10. We note that you recorded severance charges of \$1,203,000 in the fourth quarter because management determined that the amount of benefits were probable and estimable. We further note from Item 2.05 of your January 15, 2009 Form 8-K that you announced on January 14, 2009 that the Company was implementing a restructuring based on a plan approved on January 9, 2009. Please tell us how you evaluated paragraph 8 of SFAS 146, including the communication date, in determining when to record the severance charges.

Note 8. Goodwill, page 68

11. Please tell us the extent to which the cash flow model used to determine the fair value of your reporting unit, including the underlying assumptions, was consistent with similar models and assumptions used by management for other business purposes including assessing the need for a valuation allowance for your deferred tax assets and performing a test of impairment for your long-lived assets.
12. We note from page 56 that at some point during 2008 you evaluated your long-lived assets for impairment. Please tell us and disclose in future filings your assessment of property and equipment and intangible assets subject to amortization for recoverability pursuant to paragraph 8 of SFAS 144 during the fourth quarter of 2008. We note the factors that caused an impairment of your goodwill in the fourth quarter.

Item 11. Executive Compensation, page 85

13. We refer to the disclosure under the caption "Base Salaries" beginning on page 16 of the proxy statement that you have incorporated by reference into your Form 10-K. We note that your committee targets the median base salary level of the named executive officers to the 50th percentile of the peer group. We also note that the committee adjusts the base salary levels based on an executive's responsibilities, experience, and company-wide performance. In future filings, please disclose where the actual base salaries fell in relation to the 50th percentile target. To the extent an officer's base salary exceeds the target, please discuss the reasons why.
14. We refer to the disclosure under the caption "Management Incentive Program" beginning on page 17 of the proxy statement that you have incorporated by reference into your Form 10-K. It appears that the amounts paid to your named executive officers as bonuses under your 2008 Management Incentive Plan should have been disclosed under the "Non-Equity Incentive Plan Compensation" column in your Summary Compensation Table pursuant to Item 402(c)(2)(vii) of Regulation S-K. Please provide such disclosure in your future filings, to the extent then applicable, or provide us with your analysis as to why such information should not have been included in the referenced column in accordance with the referenced Item requirement.
15. In the Compensation Discussion and Analysis section of your future filings, please discuss and analyze how the compensation committee determined the actual number of shares underlying stock options and restricted stock grants and how and why those awards varied among the named executive officers.

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 letter that keys your responses to our comments and provides any requested information. Detailed letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your responses to our comments.

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:

Mr. Dave Marver
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- 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 Kate Tillan, Assistant Chief Accountant, at (202) 551-3604 if you have questions regarding comments on the financial statements and related matters. You may also contact me at (202) 551-3676. Please contact Gabriel Eckstein, Staff Attorney, at (202) 551-3286, or Tim Buchmiller, Staff Attorney, at (202) 551-3635 with any other questions.

Sincerely,

Brian Cascio
Accounting Branch Chief