



DIVISION OF  
CORPORATION FINANCE

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

September 28, 2010

Mr. Michael J. Lambert  
Chief Financial Officer  
NuVasive, Inc.  
7475 Lusk Boulevard  
San Diego, California 92121

**Re: NuVasive, Inc.**  
**Form 10-K for the Fiscal Year Ended December 31, 2009**  
**Filed February 26, 2010**  
**File No. 000-50744**

Dear Mr. Lambert:

We have reviewed your response filed September 3, 2010 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 amending your filing, 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 or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your filing and the information you provide in response to these comments, we may have additional comments.

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Form 10-K for the year ended December 31, 2009

Item 11. Executive Compensation, page 51

1. Please tell us with specificity what were the “individual’s performance level and achievement of individual performance metrics” used to determine provide full bonus payouts. Please disclose this information in future filings. Also, it is unclear from your response to comment 1 how the compensation committee “attributed the achievement of revenue goals, the profitability goals and strategic goals...to each of the named executive officers.” Please clarify.
2. We note your response to prior comment 1 states that the additional bonus opportunity “is within the discretion of the Compensation Committee” and that it “relies on the achievement of operations and/or financial goals.” Please tell us specifically what were the “operations and/or financial goals” and “the strategic milestones” that the compensation committee evaluated to determine the additional bonus.

You may contact Julie Sherman, Staff Accountant, at (202) 551-3640 or Jay Webb at (202) 551-3603 if you have any questions regarding comments on the financial statements and related matters. Please contact Alicia Lam, Staff Attorney, at (202) 551-3316 or Jay Mumford, Reviewing Attorney, at (202) 551-3637 if you have questions on any other comments. In this regard, do not hesitate to contact me at (202) 551-3212.

Sincerely,

Jeff Jaramillo  
Branch Chief