



DIVISION OF
CORPORATION FINANCE

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

December 10, 2010

Mr. Michael P. Duffy
Vice President, General Counsel and Secretary
331 Treble Cove Road, Building 600-2
North Billerica, MA 01862

Re: Lantheus Medical Imaging, Inc.
Amendment No. 1 to Registration Statement on Form S-4
Filed December 1, 2010
File No. 333-169785

Dear Mr. Duffy:

We have reviewed your filing and supplemental response letter filed December 1, 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 by amending your registration statement and providing the requested information. 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 registration statement and the information you provide in response to these comments, we may have additional comments.

Amendment No. 1 to Registration Statement on Form S-4

Prospectus Summary

1. We note your response to Comment 8 and reissue the comment in part. With respect to DEFINITY, please provide market share information to the extent that you continue to state that DEFINITY Vial Injectable Suspension is the leading ultrasound contrast agent used during echocardiogram exams. In addition, please tell us the basis for your belief that DEFINITY sales were significantly greater than Optison in 2009.

Risk Factors, page 17

"We have a substantial amount of indebtedness which may limit ...," page 33

2. We note your response to Comment 26. If you have not already done so, please disclose any other of your material obligations in respect of the notes which may be adversely impacted by your substantial outstanding indebtedness.

Management's Discussion and Analysis of Financial Condition and Results of Operations

Critical Accounting Policies

Revenue Recognition, pages 63-64

3. Please refer to your response to comment 38 and the additional disclosure provided. Please add a line item for adjustments relating to prior years for the period ended September 30, 2010 or clarify that no adjustment existed for the prior year and why.

Results of Operations, page 67

4. Refer to your response to comment 36 and the additional disclosure provided on pages 60, 68, and 69. You state on page 60 that you estimated a loss on gross profit from May 2009 until August 2010 of \$70 million due to the reactor shutdown. Your disclosure on page 69 states that for the period ended September 30, 2010 you had a decrease in gross margin of \$5.9 million directly related to the global Moly shortage. Please provide a similar disclosure for the year ended December 31, 2009 relating to the effect on your gross margin and ensure that the effect in the interim period and the year ended December 31, 2009 agree to the \$70 million disclosed on page 60.

Sources of Liquidity, pages 84-85

5. Your additional disclosure on page 85 states that the loss of gross profit due to the global moly shortage did not have a material impact on your operations. As it appears that the \$70 million loss of gross profit loss disclosed on page 60 is material to your results of operations, please clarify.

Business

Intellectual Property, page 102

6. We note your response to Comment 46 and reissue the comment in part. Please expand your disclosure to discuss the jurisdictions in which your material patents were granted. Your current disclosure of "most of Europe and important markets in Asia and Latin America" is not sufficient in this respect.

Correspondence filed December 1, 2010

7. We note your response to Comment 63 and reissue the comment in part. The amended supplemental letter you filed as correspondence appears to omit the following representation:

"[Issuer] further represents that, with respect to any broker-dealer that participates in the Exchange Officer with respect to Outstanding Securities acquired for its own account as a result of market-making activities or other trading activities, each such broker-dealer must confirm that it has not entered

into any arrangement or understanding with [Issuer] or an affiliate of [Issuer] to distribute the Exchange Securities.”

Please amend the supplemental letter to include this representation.

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 Act of 1933 and all applicable Securities 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.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Ibolya Ignat at (202) 551-3656 or Mary Mast at (202) 551-3613 if you have questions regarding comments on the financial statements and related matters. Please contact Rose Zukin at (202) 551-3239 or Daniel Greenspan at (202) 551-3623 with any other questions. In this regard, do not hesitate to contact me at (202) 551-3710.

Sincerely,

Jeffrey P. Riedler
Assistant Director

Mr. Michael P. Duffy
Lantheus Medical Imaging, Inc.
December 10, 2010
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cc: Heather L. Emmel, Esq.
Weil, Gotshal & Manges LLP
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New York, New York 10153