

April 24, 2007

Mail Stop 6010

Stephen C. Hathaway  
Chief Financial Officer and Treasurer  
TomoTherapy Incorporated  
1240 Deming Way  
Madison, Wisconsin 53717

**Re: TomoTherapy Incorporated  
Amendment No. 3 to Registration Statement on Form S-1  
Filed April 19, 2007  
File No. 333-140600**

Dear Mr. Hathaway:

We have the following comments to your filing. Where indicated, we think you should revise your document 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 supplemental information so we may better understand your disclosure. After reviewing this information, we may or may not 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 on any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Prospectus Summary, page 1

1. We note your response to our prior comment 1 regarding your Recent Developments disclosure. We reissue the comment. Please disclose a balanced discussion of your estimated first quarter performance in the summary and MD&A. In addition to discussing revenue and backlog data for the first quarter, you should provide investors with a meaningful discussion of your estimated income for the first quarter or such other information that will enable investors to properly evaluate your preliminary estimates of revenue and backlog.

Dilution, page 30

2. We note your response to our prior comment 3. Please revise the table at the bottom of page 31 to show effect to the "exercise of all vested stock options and

warrants outstanding as of December 31, 2007” as described in the paragraph preceding the table on page 31 and modify the paragraph following such table accordingly.

Report of Independent Registered Public Accounting Firm, page F-2

3. Please refer to prior comment 15 from our letter dated April 18, 2007. We re-issue this comment in its entirety.

Note F. Stock Options, page F-24

4. Please refer to prior comments 16 - 22 from our April 18, 2007 letter and our oral comments issued on April 23, 2007. Please address the following comments related to your December 31, 2006 valuation for your common stock:
  - Please provide to us the range of values suggested for the two alternatives (IPO vs. merger/sale) from each firm (Merrill Lynch, RW Baird, Piper Jaffray) and the ranges for each alternative developed by Virchow Krause Valuation LLC.
  - Please provide to us the weightings that were applied to each of the above values.
  - To the extent necessary, please also provide an explanation of the methodology used to determine the weightings.
5. Further to the above, we note from your response to these comments that you are restating the financial statements to value the stock options issued at December 7, 2007 utilizing the December 31, 2006 valuation of \$8.40 per share. Please provide to us your proposed disclosures relating to this restatement.

As appropriate, please amend your registration statement in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested supplemental information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filings reviewed by the staff to be certain that they have provided all information investors require for an informed 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.

Stephen C. Hathaway  
TomoTherapy Incorporated  
April 24, 2007  
Page 3

You may contact Tara Harkins at (202) 551-3639 or in her absence, Kaitlin Tillan at (202) 551-3604 if you have questions regarding comments on the financial statements and related matters. Please contact Jay Mumford at (202) 551-3637 or me at (202) 551-3444 with any other questions.

Sincerely,

Perry Hindin  
Special Counsel

cc: Gregory J. Lynch, Esq.  
Geoffrey R. Morgan, Esq.