



DIVISION OF
CORPORATION FINANCE

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

Mail Stop 6010

June 25, 2008

VIA U.S. MAIL and FACSIMILE

Steven R. Roth
Senior Vice President and Chief Financial Officer
Rudolph Technologies, Inc.
One Rudolph Road
PO Box 1000
Flanders, New Jersey 07836

**RE: Rudolph Technologies, Inc.
Form 10-K for the Fiscal Year Ended December 31, 2007
Filed March 3, 2008
Form 10-Q for the Quarterly Period Ended March 31, 2008
File No. 000-27965**

Dear Mr. Roth:

We have reviewed your response letter dated June 23, 2008 and filings and have the following comments. 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 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, 2007

Consolidated Financial Statements, page F-1

Summary of Significant Accounting Policies, page F-9

J. Goodwill and Other Intangible Assets, page F-11

1. Please refer to prior comments 2 and 3. Please tell us how you considered the decline in your stock price in each period in determining that there was not an event or circumstance that would more likely than not reduce the fair value of your reporting unit below its carrying amount. In this regard, please discuss the factors you believe are underlying the decline in the price of your stock and how you considered those factors in your analysis under paragraph 28

Form 10-Q for the Quarter Ended March 31, 2008

Item 4. Controls and Procedures

2. Please refer to prior comment 8. We note the proposed revisions in your response. Please also include a conclusion regarding whether your disclosure controls and procedures were effective or were not effective as of March 31, 2008 in an amendment to your March 31, 2008 Form 10-Q.

As appropriate, please amend your filing and respond to these comments within 10 business days or tell us when you will provide us with a response. 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 information. Detailed letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

Steven R. Roth
Rudolph Technologies, Inc.
June 25, 2008
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You may contact me at (202) 551-3604 if you have questions. In this regard, please do not hesitate to contact Kevin Vaughn, Accounting Branch Chief, at (202) 551-3643 with any other questions.

Sincerely,

Kate Tillan
Assistant Chief Accountant