



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

DIVISION OF
CORPORATION FINANCE

Mail Stop 3030

August 15, 2017

Via E-mail

Michael P. Plisinski
Chief Executive Officer
Rudolph Technologies, Inc.
16 Jonspin Road
Wilmington, MA 01887

**Re: Rudolph Technologies, Inc.
Form 10-K for the Year Ended December 31, 2016
Filed February 16, 2017
File No. 1-36226**

Dear Mr. Plisinski:

We have reviewed your filing 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 these comments within ten business days by providing the requested information or advise us as soon as possible when you will respond. If you do not believe our comments apply to your facts and circumstances, please tell us why in your response.

After reviewing your response to these comments, we may have additional comments.

Form 10-K for the Year Ended December 31, 2016

Item 7A Quantitative and Qualitative Disclosures About Market Risk

Foreign Currency Risk, page 37

1. You disclose the impact on the foreign-currency denominated non-operating expenses of your foreign subsidiaries as a result of a hypothetical 10% change in the U.S. dollar relative to their reporting currencies. As we note that non-operating expenses represent only 3% of total expenses reported in fiscal 2016, please clarify for us how you have complied with the requirements of Item 305(a)(ii), which require you to disclose the potential loss on future earnings resulting from one or more selected hypothetical changes in foreign currency exchange rates over a selected period of time. Otherwise, revise future filings to fully comply with the Item. Refer to the instructions to paragraph 305(a)(ii) of Regulation S-K.

Schedule of Valuation and Qualifying Accounts, page F-36

2. In light of the guidance in SAB Topic 5.BB and ASC 330-10-35-14 indicating that a write-down in the carrying amount of an inventory item from cost to net realizable value at the end of a fiscal year is viewed as creating a new "cost basis" for the item, in future filings please revise to remove the information relating to the inventory allowance/reserve as compliance with that guidance would not result in a valuation account. Further, please note that amounts recorded in separate accounts to recognize obsolete and slow-moving inventory are not considered reserves for the purpose of this schedule because those amounts in substance represent normal adjustments / impairment of inventory rather than true "reserves".

We remind you that the company and its management are responsible for the accuracy and adequacy of their disclosures, notwithstanding any review, comments, action or absence of action by the staff.

You may contact David Burton at (202) 551-3626 or me at (202) 551-3671 if you have questions regarding comments on the financial statements and related matters. Please contact Heather Percival at (202) 551-3498 or Geoff Kruczek, Special Counsel, at (202) 551-3641 with any other questions.

Sincerely,

/s/ Martin James

Martin James
Senior Assistant Chief Accountant
Office of Electronics and Machinery