



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

Mail Stop 3030

June 24, 2010

Via U.S. Mail

Mr. Paul F. McLaughlin
Chief Executive Officer
Rudolph Technologies, Inc.
One Rudolph Road, P.O. Box 1000
Flanders, NJ 07836

**Re: Rudolph Technologies, Inc.
Form 10-K for the year ended December 31, 2009
Filed March 5, 2010
File No. 0-27965**

Dear Mr. McLaughlin:

We have completed our review of your Form 10-K and related filings and have no further comments at this time.

Sincerely,

Kevin L. Vaughn
Accounting Branch Chief