



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

Mail Stop 3030

January 5, 2010

Via Facsimile and U.S. Mail

Randall Gausman
Chief Financial Officer
RAE Systems, Inc.
3775 North First Street
San Jose, CA 95134

Re: RAE Systems, Inc.
Form 10-K for the year ended December 31, 2008
Filed March 13, 2009
File No. 1-31783

Dear Mr. Gausman:

We have reviewed your letter dated December 22, 2009 and have the following comments. Where indicated, we think you should revise your documents in response to these comments. If you disagree, we will consider your explanation as to why our comments are 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 year ended December 31, 2008
Form 10-Q for period ended September 30, 2009

Exhibits 32.1 and 32.2

1. Please refer to our prior comments 7 and 8. We see that you filed amendments to your Form 10-K and each of your Forms 10-Q on December 21, 2009. However, these amendments do not appear to include the entire periodic report nor the certifications required in Exhibit 31. Further, the certifications provided in Exhibits 32.1 and 32.2 are not currently dated. Your amendments must each include the entire periodic report as well as new, currently dated and signed certifications. Please further amend your Form 10-K for the period ended December 31, 2008 and your Forms 10-Q for the periods ended March 31, 2009, June 30, 2009 and September 30, 2009 to include the entire report and certifications that are signed and currently dated by your Principal Executive Officer and Principal Financial Officer.

As appropriate, please amend your filings and respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested 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.

You may contact Eric Atallah, Staff Accountant, at (202) 551-3663 or me at (202) 551-3643 if you have questions regarding comments on the financial statements and related matters. Please contact Mary Beth Breslin, Staff Attorney, at (202) 551- 3625, or Jay Mumford, Reviewing Attorney, at (202) 551-3625 if you have questions on any other comments. In this regard, do not hesitate to contact me or Martin James, Senior Assistant Chief Accountant, at (202) 551-3671 with any questions.

Sincerely,

Kevin L. Vaughn
Accounting Branch Chief