



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

DIVISION OF
CORPORATION FINANCE

October 16, 2012

Via E-Mail

Anthony R. Fabiano
President and Chief Executive Officer
American Science and Engineering, Inc.
829 Middlesex Turnpike
Billerica, Massachusetts 01821

**Re: American Science and Engineering, Inc.
Form 10-K for the Year Ended March 31, 2012
Filed June 8, 2012
Current Report on Form 8-K dated August 27, 2012
Filed August 27, 2012
Response dated September 28, 2012
File No. 001-06549**

Dear Mr. Fabiano:

We have reviewed your response letter 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 this letter within ten business days by providing the requested information, or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances, please tell us why in your response.

After reviewing the information you provide in response to these comments, we may have additional comments.

Form 10-K for the Fiscal Year Ended March 31, 2012

1. The Division of Investment Management – without necessarily agreeing with the entirety of your analysis in your response to prior comment 1 – has indicated that it has no further questions or comments with respect to this issue at this time. You may wish to consider conducting your cash management activities in such a manner that no issue is raised under the “objective test” of Section 3(a)(1)(A). Additionally, to the extent that the company’s performance may be materially impacted by the company’s investment activities, you should consider including appropriate disclosures.

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 18

2. We note your response to our prior comment 4; however, it remains unclear whether there are material contracts that will expire within the next year. Please provide us the amount of these contracts' historic contribution to your business, and tell us where you disclose this information.

Current Report on Form 8-K dated August 27, 2012

3. We note your response to prior comment 16; however, it remains unclear how investors would know from this report that the order was a renewal rather than a new agreement. It is unclear how investors would know from the report that the customer is one that subjects you to the risks like those you mention in your response to prior comment 15. We encourage you to ensure that your disclosures include the information necessary for investors to evaluate the statements you make.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filings to be certain that the filings include the information the Securities Exchange Act of 1934 and all applicable Exchange Act rules require. 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.

In responding to our comments, please provide a written statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filings;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filings; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

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You may contact Jeanne Bennett at (202) 551-3606, or Gary Todd, Reviewing Accountant at (202) 551-3605 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) 551-3617 with any other questions.

Sincerely,

/s/ Russell Mancuso

Russell Mancuso
Branch Chief

cc (via e-mail): John DeLuca, Esq.