



DIVISION OF
CORPORATION FINANCE
MAIL STOP 3030

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

July 2, 2009

Bradley C. Anderson
Vice President – Finance and Chief Financial Officer
Amtech Systems, Inc.
131 South Clark Drive
Tempe, Arizona 85281

Re: Amtech Systems, Inc.
Form 10-K for the fiscal year ended September 30, 2008
Filed December 10, 2008
Form 8-K/A filed June 5, 2009
File No. 000-11412

Dear Mr. Anderson:

We have reviewed your response dated July 1, 2009 and related filings 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 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 on any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Form 8-K/A filed June 5, 2009

1. We refer to your response to our prior comment number 4. As previously requested, please tell us how you have complied with Rules 3-01, 3-02, 3-05 and Article 10 of Regulation S-X with regard to the interim financial statements of the acquired entity. Please tell us where you have provided the financial statements and footnote disclosures required by Rule 10-01(a). The footnote disclosure should also include management's standard representation on interim financial statements as required by Rule 10-01(b)(8) of Regulation S-X.

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2. We note your response to comment numbers 6 and 7. Please note that these comments remain open until you have filed an amendment to the Form 8-K with the requested changes. Please tell us when you will amend the Form 8-K as indicated in your response.

As appropriate, please 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 response that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please submit your cover letter on EDGAR. Please understand that we may have additional comments after reviewing your responses to our comments.

You may contact Jeanne Bennett, Staff Accountant, at (202) 551-3606 or me at (202) 551-3676 if you have questions regarding comments on the financial statements and related matters. Please contact Celia Soehner, Staff Attorney, at (202) 551-3463 or Mary Beth Breslin, Senior Attorney, at (202) 551-3625 with any other questions.

Sincerely,

Brian Cascio
Accounting Branch Chief