

July 31, 2009

Brian Cascio, Branch Chief
Division of Corporation Finance
United States Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549

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

Dear Mr. Cascio:

This letter sets forth the responses of Amtech Systems, Inc. (the "Company") to your comment letter, dated July 2, 2009, relating to the Form 8-K/A filed with the Commission on June 5, 2009. The Staff's comments have been set forth below in italics and each is followed by our response.

The Company is filing, via EDGAR, this letter setting forth the Company's responses to comments of the Staff of the Commission (the "Staff"). We have included your original questions in addition to providing our responses.

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.*

R: On July 30, 2009, we filed a further amendment ("Amendment") to the Form 8-K to include required interim financials statements and footnote disclosures required by Rule 10-01(a), as Exhibit 99.4. The footnote disclosures in Exhibit 99.4 include management's standard representation on interim financial statements.

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2. *We note your response to comment number 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.*

R: The Amendment, discussed above, includes a complete Exhibit 99.3, including the financial statements and related audit report, as requested in your comment number 6. Furthermore, the related audit report included in that Amendment has been revised to specifically state that the audit was conducted in accordance with "generally accepted auditing standards in the United States".

The Company acknowledges that it is responsible for the adequacy of the disclosure in the filings, that 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.

We trust that the foregoing is responsive to your comments. If you have any questions or comments, please contact the undersigned.

Best regards,
Amtech Systems, Inc.

Robert T. Hass, CPA
Chief Accounting Officer

CC: Michael Garnreiter, Chairman of the Audit Committee of the Board of Directors
Christopher Johnson, Squire, Sanders & Dempsey L.L.P.
