

Mail Stop 6010

June 13, 2006

Via Facsimile and U.S. Mail

Mark A. Glazer
Chief Financial Officer
Vicor Corporation
25 Frontage Road
Andover, MA 01810

Re: Vicor Corporation
Form 10-K for the fiscal year ended December 31, 2005
Filed March 14, 2006
File No. 0-18277

Dear Mr. Glazer:

We have reviewed your filing and have the following comments. We have limited our review to matters related to the issues raised in our comments. Where indicated, we think you should revise your future filings 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 supplemental information so we may better understand your disclosure. After reviewing this information, we may or may not 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 comment or on any other aspects of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Notes to Consolidated Financial Statements

Note 14. Segment Information, page 47

1. Based on your disclosures on pages 2 through 4 of the filing, it appears that you offer multiple different product lines. Please revise future filings to disclose revenues by product group in accordance with paragraph 37 of SFAS 131.
2. We note the statements by your CEO and chief operating decision maker included in the press released furnished on your Form 8-K dated April 24, 2006. Specifically, we refer to the statements that “while revenues and profitability in our brick business are improving, V-I Chip and Picor are gearing up to support their respective product roadmaps and business strategies” and “in Vicor, Picor and V-I Chip [you] see independent prospects for an exciting future...to achieve operational excellence, [you] have empowered leadership teams capable of tackling their respective tasks.” These statements appear to indicate that you have more than one line of business for which discrete financial information is available and is reviewed by him.
 - Please identify for us each of your operating segments, clearly describing the business activities of each.
 - If different from the lines of business identified by your chief operating decision maker, please explain why that is the case. Refer to paragraph 10 of SFAS 131.
 - Using the product discussions included on pages 2 through 4, clearly identify the products and services provided by each operating segment.
 - Provide us with your analysis supporting your conclusion that you have only one reportable segment. Clearly explain how each of your operating segments met the aggregation criteria outlined in paragraph 17 of SFAS 131, including the criteria for similar economic characteristics.
3. We note you state that you “operate in one industry segment.” Notwithstanding the comment above, please revise future filings to clarify, if true, that you have only one reportable segment based on the guidelines of SFAS 131.

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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 supplemental information. Detailed cover letters greatly facilitate our review. Please file your cover letter on EDGAR. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filings reviewed by the staff to be certain that they have provided all information investors 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 connection with responding to our comments, please provide, in writing, a 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 filing; 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.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in our review of your filing or in response to our comments on your filing.

You may contact me at (202) 551-3643 if you have questions regarding these comments. In this regard, do not hesitate to contact Martin James, the Senior Assistant Chief Accountant, at (202) 551-3671.

Sincerely,

Kevin L. Vaughn
Reviewing Accountant