

Mail Stop 6010

June 29, 2006

Via Facsimile and U.S. Mail

Patrizio Vinciarelli  
President and Chief Executive 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. Vinciarelli:

We have reviewed your response letter dated June 23, 2006 and have the following additional comment. Where indicated, we think you should revise your future filings in response to this comment. 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 our comment, 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.

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. We note your response to prior comments 1 and 2 where you indicate that you provide one group of similar products and have one operating segment. Your reasons for reaching these conclusions are still unclear to us.
  - While you told us that your CEO and Chief Operating Decision Maker (“CODM”) does not regularly review the operating results of the V-I Chip, Picor and Brick business units, we note that in each of the quarterly earnings press releases furnished on Forms 8-K dated April 14, 2005, July 18, 2005, October 18, 2005, February 8, 2006 and April 24, 2006, your CODM provided a discussion of the performance of the business units. For example, in the press release dated July 18, 2005, we note statements such as “continued efficiencies and productivity improvements in our Brick business unit yielded improved gross margins.” Similarly, in the press release dated February 2, 2006, in discussing your fiscal year results, your CODM stated, “While revenues and profitability in our legacy brick business are improving, the V-I Chip and Picor business units are entering their next phase with product roadmaps that support significant penetration of new markets. V-I Chips have completed customer qualification and a production ramp is due to start in Q2. We anticipate that the 2nd half of '06 will see tangible V-I Chip revenues from initial programs in volume production and that 2007 will see further expansion driven by additional, major programs.”
  - Your response indicates that your CODM makes allocation and resource decisions based on the consolidated results of the company. However, in the press release dated July 18, 2005, we note statements such as “V-I Chip and Picor business units advanced their respective product plans.....V-I Chip and Picor are actively recruiting key individuals to contribute to the next phase of their evolution.” Similarly, we note in the press release dated October 18, 2005, statements by your CODM indicating that V-I Chip and Picor business units continued to reach milestones in their product plans and that continued investments in business units with innovative technology was being financed by the profitability of your brick business.
    - a) Since the statements appear to indicate that your CODM has reviewed discrete financial information for these business units, and used that information to assess their performance and to allocate resources, tell us how you considered these statements in reaching the conclusions outlined in your response.

- b) As the statements appear to strongly indicate that the business units are operating segments which do not have similar economic characteristics, please explain how you concluded that you have one operating and reportable segment.
- c) Please explain how your CODM obtained the information he presented to investors.
- d) Provide us with a copy of the detailed reporting package reviewed by your CODM for each of the quarterly periods in 2005 and 2006, and on which he based these statements. We may have further comments after reviewing your response.
- e) Otherwise, please confirm that in all future filings you will provide segment results for each of the V-I Chip, Picor and Brick business units identified by your CODM.
- f) Similarly, confirm that in all future filings you will include the revenue by product disclosures required by paragraph 37 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 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.

You may contact Kevin Vaughn at (202) 551-3643 or me at (202) 551-3671 if you have questions regarding these comments.

Sincerely,

Martin F. James  
Senior Assistant Chief Accountant