

August 21, 2007

Mail Stop 6010

*By U.S. Mail and facsimile to (858) 410-8901*

Henry L. Nordhoff  
Chairman, President and Chief Executive Officer  
Gen-Probe Incorporated  
10210 Genetic Center Drive  
San Diego, CA 92121

**Re: Gen-Probe Incorporated  
Definitive 14A  
Filed April 26, 2007  
File No. 001-31279**

Dear Mr. Nordhoff:

We have limited our review of your definitive proxy statement to your executive compensation and other related disclosure and have the following comments. Our review of your filing is part of the Division's focused review of executive compensation disclosure.

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 filings. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call me at the telephone number listed at the end of this letter.

In some comments we have asked you to provide us with additional information so we may better understand your disclosure. Please do so within the time frame set forth below. You should comply with the remaining comments in all future filings, as applicable. Please confirm in writing that you will do so and also explain to us how you intend to comply. Please understand that after our review of all of your responses, we may raise additional comments.

If you disagree with any of these comments, 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.

Compensation Discussion and Analysis, page 31

1. You provide a description of how company performance affects compensation, but only a general discussion and little analysis of the effect of individual performance, even though your disclosure suggests it is a material factor considered by the compensation committee. For example, in your discussion of your executive compensation philosophy on page 31, you state that one of the four principle objectives of the compensation committee is to provide total compensation that is tied to, and varies based upon, both *individual* and corporate performance. On page 33 you indicate in the last paragraph that the compensation committee determines base salary increases for the named executive officers based upon, among other factors, the committee's subjective evaluation of the performance of the executive officers, as well the officer's experience, commitment to corporate core values and potential for advancement. In your discussion of annual cash bonus on page 34, you state in the first paragraph that in the event performance targets are achieved, the amount of an executive's bonus varies based on individual performance, but you provide only a one sentence discussion of the "individual and team performance factor" that was used to determine 2006 bonuses. Please expand your disclosure to provide additional qualitative, and if applicable, quantitative detail and an analysis of how individual performance contributed to actual 2006 compensation for the named executive officers. For example, in assigning an individual and team performance factor to a named executive officer, what factors does the compensation committee consider in its assessment of such officer's overall performance and, if applicable, how are they weighted? Are certain factors or goals considered more determinative of compensation levels than others? In responding to this comment, please address your statement in footnote 3 to your summary compensation table that all goals were "predetermined and *objectively* measurable." See Item 402(b)(2)(vii) of Regulation S-K.

Executive Compensation Philosophy, page 31

2. You indicate on page 32 that in addition to the August 2005 report from Compensia, the compensation committee utilized the 2006 MEDIC Executive Compensation Survey and the 2006 Radford Biotechnology Survey to provide further data points and to help the committee calibrate the findings of the compensation consultant. Please describe these surveys, indicate the number and type of companies used in such surveys and discuss the degree to which the compensation committee considered such companies comparable to you.

Compensation Benchmarking and Peer Group, page 33

3. You indicate in the first two sentences of this section that the compensation committee sets base salary structures and annual cash incentive targets for named

executive officers around the sixtieth percentile of its peer group and sets equity incentive targets around the seventy-fifth percentile of the peer group. You also indicate that to retain and motivate your key executives, the committee may determine that it is in the best interests of the company to negotiate total compensation packages with executive management that may deviate from these general percentages. Disclose the percentiles of the peer group represented by actual compensation paid for 2006.

Annual Cash Bonus, page 34

4. Disclose the range of company performance factor, or “CPF,” values, how the two performance goals that determine CPF values, net income and revenue, are weighted in terms of their contribution to the CPF, the ranges of achievement for each performance goal and how achievement of a performance goal correlates to a percentage of that goal’s portion of the CPF. For example, on a percentage basis what are the minimum, target and maximum levels of achievement for your net income goal, and how would achievement of 110% of the target level affect that particular goal’s portion of the CPF? Also, to the extent applicable, disclose the range of values of the individual and team performance factor, or “ITPF.” We note that based on the formula provided on page 34 and the actual annual cash bonuses disclosed in the summary compensation table, it appears that your chief executive officer, chief financial officer and chief scientist had ITPF values of 1.16, 1.34 and 1.7 respectively.
5. You have not provided a quantitative discussion of the terms of the necessary performance objectives to be achieved in order for your executive officers to earn their incentive compensation. Please disclose the specific net income and revenue targets used to determine incentive amounts. Given your statement in footnote 3 to the summary compensation table that annual cash bonus goals were predetermined and objectively measurable, also disclose the performance measures used to determine each named executive officer’s individual and team performance factor. To the extent you believe that disclosure of these performance objectives is not required because it would result in competitive harm such that you may omit this information under Instruction 4 to Item 402(b) of Regulation S-K, please provide on a supplemental basis a detailed explanation for such conclusion. Please also disclose how difficult it would be for the named executive officers or how likely it will be for you to achieve the undisclosed target levels or other factors. General statements regarding the level of difficulty or ease associated with achieving performance goals are not sufficient. In discussing how difficult it will be for an executive or how likely it will be for you to achieve the target levels or other factors, please provide as much detail as necessary without providing information that would result in competitive harm.

Equity Awards, page 34

6. If applicable, describe the basis for allocating compensation between stock options and restricted stock awards. See Item 402(b)(2)(iii) of Regulation S-K.

Post-Termination Benefits, page 36

7. Expand your disclosure of your post-termination benefits to include a more thorough discussion of Item 402(b)(1) of Regulation S-K. Discuss how this compensation component and your decisions regarding this element fit into your overall compensation objectives and affect decisions regarding other elements. Also, analyze why you structured the employment agreements of the named executive officers in the manner summarized on page 44. For example, discuss why you chose to provide your chief executive officer the \$10,000 per year medical reimbursement and the “gross up” payment discussed on page 45, why the severance and bonus portion of his severance package is more generous than that of other officers and why all named executive officers have their option and stock awards automatically vest upon occurrence of the double trigger change of control event you describe in the first paragraph on page 36.

Summary Compensation Table, page 38

8. The Compensation Discussion and Analysis should be sufficiently precise to identify material differences in compensation policies with respect to individual named executive officers. Refer to Section II.B.1. of Commission Release No. 33-8732A. We note the disparity between your chief executive officer’s base salary and that of the other named executive officers. We also refer you to stock and option awards granted to your chief executive officer noted in the table on page 39 as compared to the lesser awards granted to the other named executive officers. Please provide a more detailed discussion of how and why your chief executive officer’s compensation differs from that of the other named executive officers.

Outstanding Equity Awards at Fiscal year-End, page 40

9. Footnotes 1 and 2 to this table set forth the vesting schedule of the option and stock awards but without disclosing their grant dates, it does not appear that you have complied with Instruction 2 to Item 402(f)(2) of Regulation S-K. Please disclose by footnote to the applicable columns the vesting dates of option and stock awards held at fiscal year end.

10. Footnote 4 to this table and footnote 2 to your option exercises and stock vested table each reference Deferred Issuance Restricted Stock Awards. Supplement your disclosure to describe these awards. For example, explain how such awards are earned.

Potential Payment Upon Termination or Change-in-Control, page 44

11. Your disclosure in this section is not fully responsive to Item 402(j). For example, you disclose dollar amounts in your table on page 44 for automatic vesting of options and restricted stock, but you do not provide the information required by Item 402(j)(3) as to this column. In addition, to the extent there are any material conditions or obligations applicable to the receipt of payments or benefits, including non-compete, non-solicitation and confidentiality agreements, please describe and explain such provisions. Please provide all the information required by Item 402(j).

Director Compensation, page 47

12. Similar to what you have provided in footnote 2 to the director compensation table, please include a footnote describing all assumptions made in the valuation of the option awards granted to your directors by reference to a discussion of those assumptions in the footnotes to your financial statements included in your annual report on Form 10-K. See the Instruction to Item 402(k) of Regulation S-K, indicating that the instruction to Item 402(c)(2)(v) and (vi) applies equally to Item 402(k).
13. You state in footnote 3 that in May 2006, each director, other than Dr. Laubach, received an award of options to acquire 10,000 shares with grant value of \$242,747 (10,000 shares multiplied by \$24.2747). Either confirm that such value represents the grant date fair value computed in accordance with FAS 123R or disclose by footnote to the appropriate column the grant date fair value of each equity award computed in accordance with FAS 123R. Disclose by footnote to the appropriate column similar information with respect to each option award. Also, disclose by footnote to the appropriate columns the aggregate number of stock awards and the aggregate number of option awards outstanding at fiscal year end for each director. See the Instruction to Item 402(k)(2)(iii) and (iv) of Regulation S-K.

14. We note your disclosure in the last paragraph of this section on page 48 regarding a grant of options to purchase 10,000 shares of your common stock to each non-employee director. It is unclear what the penultimate sentence of this paragraph means. Please revise. Also, it is unclear whether this grant is the same grant described in footnote 3 to the table. Please confirm and reconcile the reference in this paragraph to an exercise price per share of \$52.69 with the \$24.2747 referred to in footnote 3.

Related-Persons Transactions Policy and Procedures, page 48

15. You describe the policies and procedures involving related transactions. Disclose whether the policies and procedures are in writing, and if not, how such policies and procedures are evidenced. See Item 404(b)(1)(iv).

Please respond to our comments by September 21, 2007, or tell us by that time when you will provide us with a response.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes all information required under the Securities Exchange Act of 1934 and that they have provided all information investors require for an informed investment decision. 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.

When you respond 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 filing;
- staff comments or changes to disclosure in response to 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 connection with our review of your filing or in response to comments.

Henry L. Nordhoff  
Gen-Probe Incorporated  
August 21, 2007  
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Please contact me at (202) 551-3444 with any questions.

Sincerely,

Perry J. Hindin  
Special Counsel