

September 26, 2007

Mail Stop 4563

By U.S. Mail and facsimile to (312) 930-4556

Craig S. Donohue
Chief Executive Officer
Chicago Mercantile Exchange Holdings, Inc.
20 South Wacker Drive
Chicago, Illinois 60606

**Re: Chicago Mercantile Exchange Holdings, Inc.
Definitive 14A
Filed March 15, 2007
File No. 00-33379**

Dear Mr. Donohue:

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 22

1. Your disclosure suggests that individual performance was a significant factor considered by the Committee in awarding cash incentive compensation and determining annual equity grants. Please disclose and analyze how individual performance contributed to actual 2006 compensation for the named executive officers. For example, disclose the elements of individual performance, both quantitative and qualitative, and specific contributions the compensation committee considered in its evaluation, and if applicable, how the committee weighted and factored them into specific compensation decisions. See Item 402(b)(2)(vii) and Item 402(b)(1)(v) of Regulation S-K.
2. Please disclose all the terms of the necessary targets or performance objectives to be achieved in order for your executive officers to earn their incentive compensation for 2006 or 2007. For example, although you disclose the cash earnings target on page 26, you state that the Board utilizes other additional metrics for determining compensation under the Annual Incentive Plan. Please note that qualitative goals generally need to be presented to conform to the requirements of 402(b)(2)(v). To the extent you believe disclosure of certain performance metrics is not required because it would result in competitive harm such that you may omit the disclosure under Instruction 4 to Item 402(b) of Regulation S-K, please provide a detailed supplemental analysis supporting your conclusion and provide appropriate disclosure under Instruction 4. In discussing how difficult it will be for the executive or how likely it will be for the registrant to achieve the target levels or other factors, revise your disclosure to provide as much detail as necessary without providing information that poses a reasonable risk of competitive harm. Please further refer to Item 402(b)(1)(v and vi) of Regulation S-K.

Equity, page 24

3. In your discussion of the distribution of equity value among eligible employees, please clarify how the target distribution of equity awards between officers and non-officers impacts awards, both target awards and any adjustments. Please refer to Item 402(b)(1)(v) of Regulation S-K.

Benchmarking, page 27

4. You state on page 20 that you set compensation at the 50th percentile of competitive market data. Please further clarify how the Committee uses the benchmark data from the three distinct peer groups used to set compensation levels. Include a discussion of where actual compensation fell in relationship to targeted parameters. To the extent actual compensation was outside the targeted

- range, please explain why. Please refer to Item 402(b)(1)(v) and Item 402(b)(2)(xiv) of Regulation S-K.
5. Please disclose and analyze how each compensation component and your decisions regarding these elements fit into your overall compensation objectives and their impact regarding other elements. See Item 402(b)(1)(vi) of Regulation S-K. It is not clear whether you review each element of compensation independently or whether you consider each element collectively with the other elements of your compensation program when establishing the various forms and levels of compensation. Please provide sufficient quantitative or qualitative disclosure as appropriate of the analyses underlying the Committee's decision to make specific compensation awards and how decisions regarding one type of award motivate the Committee to award or consider other forms of compensation. Explain and place in context how you considered each element of compensation and how or why determinations with respect to one element may or may not have influenced the Committee's decisions with respect to other allocated awards.
 6. Please address the Committee's analysis of the information contained in the total compensation profiles and how the evaluation of this information resulted in specific awards for the fiscal year or modifications to the manner in which you implement your compensation program. Refer to disclosure on page 29.

Employment Contracts and Retention Agreements, page 29

7. Please discuss how the Committee determined that the employment contracts and retention agreements support the objectives of your compensation program. Please refer to Item 402(b)(1)(vi) of Regulation S-K.

Use of Outside Consultants, page 30

8. With respect to the engagement of Towers Perrin, please provide the full disclosure required by Item 407(e)(3)(iii) of Regulation S-K. This includes a description of the nature and scope of the consultant's assignment or the material elements of the instructions or directions given to the consultant with respect to the performance of its duties under the engagement. Please provide similar information with relating to any other consultants who provided information used to determine compensation. Refer, for example, to your discussion of services provided by Hewitt Associates.

Potential Payments Upon Termination or Change in Control, page 37

9. Please describe and explain how the Committee determined the appropriate payment and benefit levels under the various circumstances that trigger payments or provision of benefits under the employment agreements or change of control

arrangements. Also, in the Compensation Discussion and Analysis, discuss how these arrangements fit into your overall compensation objectives and affect the decisions you made regarding other compensation elements and the rationale for decisions made in connection with these arrangements. To the extent the terms resulted from negotiations or were derived from an evaluation of similar benefits provided by peer companies; clarify how these factors impacted the resulting benefits. Refer to Item 402(j) and Item 402(b)(1)(v) of Regulation S-K. See paragraphs (b)(1)(v) and (j)(3) of Item 402 of Regulation S-K.

10. It appears that the severance arrangements made for executive officers who are terminated as a result of the merger with CBOT do not apply to all employees. Please provide a quantitative analysis of the payments under this severance policy. Please refer to Item 402(j) of Regulation S-K.

Director Compensation, page 42

11. Disclose all assumptions made in the valuation of awards in the option awards column of the table by reference to a discussion of those assumptions in your financial statements, footnotes to the financial statements, or discussion in management's discussion and analysis. See Instruction to Regulation S-K Item 402(k), which refers to Instruction 1 to Item 402(c)(2)(v) and (vi).
12. For each director, disclose by footnote to the stock and option awards columns of the director compensation table the grant date fair value of each equity award computed in accordance with FAS 123R. See Instruction to Regulation S-K Item 402(k)(2)(iii) and (iv).
13. Disclose the aggregate number of stock awards and the aggregate number of option awards outstanding at fiscal year end held by each of those directors, as required in the Instruction to Item 402(k)(2)(iii) and (iv).

Please respond to our comments by October 26, 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:

Craig S. Donohue, CEO
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- 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.

Please contact me at (202) 551-3419 with any questions.

Sincerely,

Christian N. Windsor
Special Counsel

CC: Meg. Austin
Assistant Corp. Secretary