

Mail Stop 6010

September 30, 2008

O. Joe Caldarelli  
Chief Executive Officer  
CPI International, Inc.  
811 Hansen Way  
Palo Alto, CA 95303

**Re: CPI International, Inc.  
Form 10-K for Fiscal Year Ended September 28, 2007  
Filed December 12, 2007  
File 0-51928**

Dear Mr. Caldarelli:

We have reviewed your filing and have the following comments. Where indicated, we think you should revise your document 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 information so we may better understand your disclosure. After reviewing this information, we may 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 comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Item 11. Executive Compensation, page 63

1. Please explain why you have not included 2006 fiscal year compensation disclosure in your summary compensation table, which is incorporated by reference to your proxy statement filed January 25, 2008, in accordance with instruction 1 to Item 402(c) of Regulation S-K.
2. We note from the disclosure incorporated by reference from your proxy statement that your compensation committee determines compensation by considering the compensation awarded by approximately 15 peer group companies. In your future filings, please identify the companies in your peer group. Refer to

- Item 402(b)(2)(xiv) of Regulation S-K. Please also briefly discuss in your applicable future filings how each element of compensation you provide to the named executive officers relates to the data you have analyzed from the peer companies and include an analysis of where actual payments under each element of compensation actually fell within the targeted range. If any of your named executive officers are compensated at levels that are materially different from the targeted levels of compensation, please also provide discussion and analysis as to why.
3. We note from the disclosure incorporated by reference from your proxy statement that you have not quantified the various objective financial and performance goals that are necessary to be achieved in order for your named executive officers to earn their compensation under the Management Incentive Plan. Please provide such disclosure in your future filings and clarify how the achievement of those objectives translated into the incentive compensation awarded to each named executive officer. To the extent you believe that disclosure of the performance goals, on a historical basis, would result in competitive harm such that the information could be excluded under Instruction 4 to Item 402(b) of Regulation S-K, please provide us with a detailed explanation supporting your conclusion. Refer also to Question 118.04 of the Regulation S-K Compliance and Disclosure Interpretations available on our website at <http://www.sec.gov/divisions/corpfin/guidance/regs-kinterp.htm>. If it is appropriate to omit specific targets or performance objectives based on a competitive harm analysis, please provide the appropriate disclosure pursuant to Instruction 4 to Item 402(b) of Regulation S-K. If discussing how difficult or likely it will be to achieve the targeted performance goals, you should provide as much detail as necessary without disclosing information that poses a reasonable risk of competitive harm and provide sufficient discussion and analysis as to the level of increased performance the established financial measures are intended to incentivize.
  4. Please provide additional discussion and analysis of the factors considered by the compensation committee in determining the appropriate level of stock option awards to your named executive officers. In particular, discuss how the consideration of peer group companies affected the awards.

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 amendment that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your responses to our comments.

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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.

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 filing;
- 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 Ruairi Regan at (202) 551-3269 or me at (202) 551-3635 if you have any questions.

Sincerely,

Tim Buchmiller  
Attorney-Advisor  
(or designee)