



UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549

DIVISION OF  
CORPORATION FINANCE

November 5, 2010

Mr. Lawrence Davis  
Chief Financial Officer  
Hydrogenics Corporation  
5985 McLaughlin Road  
Mississauga, Ontario  
CANADA L5R 1B8

**Re: Hydrogenics Corporation  
Form 20-F for the Fiscal Year Ended December 31, 2009  
File No. 000-31815**

Dear Mr. Davis:

We have reviewed your filing and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter within ten business days by providing the requested information or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances, please tell us why in your response.

After reviewing the information you provide in response to these comments, we may have additional comments.

Form 20-F for the Fiscal Year Ended December 31, 2009

Item 4. Information on the Company, page 18

Securing Additional Capital, page 23

1. We note your disclosure of proceeds before transaction costs from the APIF transaction and your January 2010 registered direct offering. In future filings, please also disclose net proceeds received from any such transactions.

Item 6. Directors, Senior Management and Employees, page 48

Employees, page 61

2. In future filings, please reconcile the disclosure on page 20 that at December 31, 2008, your Test Systems business segment no longer had employees with the disclosure on page 61 that at December 31, 2008, this segment employed five full time employees.

Item 7. Major Shareholders and Related Party Transactions, page 63

3. We note your disclosure of the agreements with General Motors. We further note your response to our August 20, 2009 letter that you would file these agreements as exhibits to your future filings as required by Instruction 4(b)(i) of the Instructions as to Exhibits of Form 20-F. Please file these agreements as exhibits to your Form 20-F.

Item 15. Controls and Procedures, page 78

4. We note your management's conclusion regarding the effectiveness of your disclosure controls and procedures, which appears to be based on the definition in Rules 13a-15(e) and 15d-15(e) under the Exchange Act. As stated, however, your description does not fully conform to the definition set forth in those rules. In future filings, please revise to state that the effectiveness conclusion is based upon the entire definition Exchange Act Rules 13a-15(e) and 15d-15(e) or simply state the conclusion without definition.
5. We note your description of the definition of internal control over financial reporting. The description appears to be based on the definition of internal control over financial reporting set forth in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. As described, however, the description does not fully conform to the definition set forth in those rules given that it does not indicate that your internal control over financial reporting includes those policies and procedures as described in subparts (1), (2), and (3) of the above-referenced rules. Please confirm, if true, that your management's conclusion regarding effectiveness is based on the full definition of internal control over financial reporting set forth in the applicable rules and revise your disclosure accordingly in future filings. Alternatively, you may simply state, if true, that your management concluded on the applicable dates that your internal control over financial reporting was effective.

Evaluation of Internal Controls, page 79

6. Please disclose management's conclusion of the effectiveness of the company's internal controls over financial reporting as of the end of the current fiscal year covered in your report. In this regard, we note that management's conclusion relates to effectiveness at December 31, 2008 and not December 31, 2009.

Limitations on Controls and Procedures, page 79

7. With a view toward future disclosure, please confirm that your disclosure controls and procedures are effective at the reasonable assurance level.

Consolidated Financial Statements, page F-1

Note 2. Basis of Preparation, page F-12

Goodwill, page F-14

8. In future filings, to the extent that any of your reporting units have estimated fair values that are not substantially in excess of their carrying value, and goodwill for these reporting units, in the aggregate or individually, could materially impact your operating results, please provide the following disclosures for each reporting unit:
- Identify the reporting unit.
  - The percentage by which fair value exceeds carrying value as of the most-recent step-one test.
  - The amount of goodwill allocated to the reporting unit.
  - A description of the assumptions that drive the estimated fair value.
  - A discussion of any uncertainties associated with the key assumptions. For example, to the extent that you have included assumptions in your discounted cash flow model that deviate from your historical results, please include a discussion of these assumptions.
  - A discussion of any potential events, trends and/or circumstances that could have a negative effect on estimated fair value.
  - Any other material and useful information you gather and analyze regarding the risks of recoverability of your goodwill.

If you have determined that estimated fair values substantially exceed carrying values for all of your reporting units, please disclose that determination. Refer to Item 303 of Regulation S-K.

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 the information the Securities Exchange Act of 1934 and all applicable Exchange Act rules 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 responding to our comments, please provide a written 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.

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You may contact Dale Welcome at (202) 551-3865 or Tricia Armelin at (202) 551-3747 if you have questions regarding comments on the financial statements and related matters. Please contact Jessica Dickerson at (202) 551-3749 or Craig Slivka at (202) 551-3729 with any other questions.

Sincerely,

John Cash  
Accounting Branch Chief