



DIVISION OF
CORPORATION FINANCE

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

January 28, 2011

Mr. Mark Weinswig
Chief Financial Officer
EMCORE Corporation
10420 Research Road, SE
Albuquerque, NM 87123

Re: EMCORE Corporation
Form 10-K for the fiscal year ended September 30, 2010
Filed January 10, 2011
File No. 000-22175

Dear Mr. Weinswig:

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 10-K for the fiscal year ended September 30, 2010

Item 7. Management's Discussion and Analysis.... page 36

Management Summary, page 36

1. Regarding the series of measures implemented in 2010 to align your cost structure with revenue forecasts, please tell us how your MD&A disclosure considers the guidance regarding restructuring plans from Question 4 of SAB Topic 5-P.

Critical Accounting Policies, page 38

Valuation of Long-lived Assets, page 39

2. We see your history of losses. Tell us whether you have long-lived assets you believe are at risk for impairment based on your most recent testing. If so, please expand the related critical accounting policy disclosure in future filings to more specifically describe the nature of the assets at risk, the methods and key assumptions on which you based your evaluation and the degree of uncertainty associated with key assumptions.

Comparison of Fiscal Years Ended September 30, 2010 and 2009, page 42

Revenue, page 42

3. In future filings please more fully describe the material factors contributing to significant changes in revenues as referred to in your disclosure. In that regard, please clarify the underlying factors responsible for the increase in Fiber Optic segment sales and, as applicable, please connect the discussion to specific products described in Item 1 Business.

In general, the discussion of revenues should describe the underlying business reasons for factors cited as responsible for material changes in revenues, such as changes arising from varying demand, changing prices, new products, new markets and other significant matters. Please refer to Item 303(a)(3) of Regulation S-K and Securities Act Release 33-8350, Interpretation: Commission Guidance Regarding Management's Discussion and Analysis of Financial Condition and Results of Operations.

Liquidity and Capital Resources, page 46

4. We refer to your agreement with Suncore Photovoltaics Co., Ltd. With a view toward enhanced disclosures in future filings, please tell us when you are required to provide your 40% of contributed capital to the joint venture and how you anticipate funding any amount in excess of consulting fees you described on page 11.
5. As a related matter, please tell us why you did not include the required capital contribution in your contractual obligations and commitments table.

Item 8. Financial Statements

Notes to Consolidated Financial Statements, page 55

Note 2. Summary of Significant Accounting Policies, page 56

Revenue Recognition, page 58

6. We refer to your disclosures, such as on page 21, regarding the qualification process which customers must complete prior to accepting certain products manufactured at contract manufacturers. With a view towards enhanced disclosures in future filings, please tell us how you consider the qualification process in your revenue recognition policy.
7. We see you record service revenue for hardware repairs and calibrations, as well as government contract revenue. We also see that gross margin on services has ranged from 46% in 2008 to 17% in 2010. Please help us understand how you identify services revenues and the related costs of those revenues for purposes of the income statement disaggregation. In that regard, please tell us:
 - The composition of services revenues in the periods presented and the reasons for the decrease in services revenues since your fiscal 2008 year end.
 - The reasons for the decrease in gross margins from services since your fiscal 2008 year end.
 - How you allocate and present revenues and related costs for products and services under bundled arrangements, if any.
 - How you distinguish government contracts between those reported as service revenue and those reported as cost reimbursements.
8. Please tell us, with a view toward disclosure in future filings, the aspects of the solar panel and solar systems projects leading you to conclude that percentage of completion accounting is appropriate in your specific circumstances.

Note 4. Equity, page 60

Warrants, page 63

9. We refer to the 3,000,003 warrants you have outstanding as of September 30, 2010. We see your reference on page 65 that you account for 1,400,003 of the warrants as equity and your further reference on page 67 that you account for 1,600,000 of the warrants as a liability. Please tell us the material terms of the warrants you considered and how you have applied the guidance in FASB ASC 815 in evaluating whether the warrants should be classified as equity or liabilities. Please provide a separate analysis for the warrants issued related to the private placement of common stock and the warrants issued related to the equity line of credit facility.

Note 8. Inventory, page 70

10. Under FASB ASC 330-10-35-14 and SAB Topic 5-BB, inventory impairment charges establish a new cost basis for inventories. Accordingly, tell us why you believe it is consistent with GAAP to characterize inventory impairment charges as establishing “reserves.” Also, with respect to the tabular disclosure, tell us why the reported “reserve” should not be netted against the amounts of the individual categories of inventory for financial reporting purposes. Explain the basis in GAAP for your view.

Note 11. Intangible Assets, page 72

11. In future filings please also disclose the gross carrying amount and accumulated amortization for each major class of intangible asset. Refer to FASB ASC 350-30-50-2.

Note 12. Accrued Expenses and Other Current Liabilities, page 73

12. It appears you may have implemented restructuring plans in fiscal 2009 and 2010 and it appears the activity related to the plans maybe ongoing. In that regard, please tell us the amounts of restructuring costs incurred in each year and how you considered the disclosures from FASB ASC 420-10-50.

Mr. Mark Weinswig
EMCORE Corporation
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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 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.

You may contact Leigh Ann Schultz at 202-551-3628 or Gary Todd at 202-551-3605 if you have questions regarding comments on the financial statements and related matters. You may also contact me at (202) 551-3676 with any other questions.

Sincerely,

for

Brian Cascio
Accounting Branch Chief