

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

February 17, 2011

Mr. Robert E. Hult Chief Financial Officer Mercury Computer Systems, Inc. 201 Riverneck Road Chelmsford, Massachusetts 01824

Re: Mercury Computer Systems, Inc.

Form 10-K for the year ended June 30, 2010

File No. 000-23599

Dear Mr. Hult:

We have completed our review of your filings and do not have any further comments at this time.

Sincerely,

Jeff Jaramillo Accounting Branch Chief