

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549**

FORM 8-K

**CURRENT REPORT
PURSUANT TO SECTION 13 OR 15(d) OF THE
SECURITIES EXCHANGE ACT OF 1934**

Date of report (Date of earliest event reported): **March 20, 2008**

Mercury Computer Systems, Inc.
(Exact Name of Registrant as Specified in Charter)

Massachusetts
(State or Other Jurisdiction of Incorporation)

000-23599
(Commission File Number)

04-2741391
(IRS Employer Identification No.)

199 Riverneck Road, Chelmsford, Massachusetts
(Address of Principal Executive Offices)

01824
(Zip Code)

Registrant's telephone number, including area code: **(978) 256-1300**

Not Applicable
(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Item 7.01 Regulation FD Disclosure

As reported on Form 4 filings with the Securities and Exchange Commission (the "Commission"), during the first quarter of calendar year 2008, there have been dispositions of shares of common stock of Mercury Computer Systems, Inc. (the "Company") by certain directors and executive officers. These dispositions related primarily to (1) brokers' sales of stock from the accounts of two directors following margin calls associated with those accounts, and (2) the surrender of restricted stock held by certain officers to satisfy the tax withholding obligations of such officers upon the vesting of the restricted stock. The disposition of shares to the Company to satisfy these tax withholding obligations did not involve sales on the open market.

The Company has adopted a policy prohibiting directors, executive officers, and certain other insiders from holding securities of the Company in a margin account. The policy "grandfathered" any margin accounts existing on the date of adoption of the policy, which included the margin accounts of the two directors described above.

One of these directors, James R. Bertelli, has adopted a stock trading plan to sell a portion of his shares of the Company's common stock. The stock trading plan was adopted on March 17, 2008, in accordance with guidelines specified under Rule 10b5-1 of the Securities Exchange Act of 1934. Under the plan, Mr. Bertelli may sell up to 60,000 shares held in his existing margin account pursuant to a formula intended to cover potential margin calls with respect to such account. Sales of common stock by Mr. Bertelli pursuant to the terms of the plan will be disclosed publicly through Form 144 and Form 4 filings with the Commission.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Dated: March 20, 2008

MERCURY COMPUTER SYSTEMS, INC.

By: /s/ Robert E. Hult

Name: Robert E. Hult

Title: Senior Vice President and Chief Financial Officer