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) December 22, 2004

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

(978) 256-1300 (Registrant's Telephone Number, Including Area Code)

N/A (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 1.01 ENTRY INTO A MATERIAL DEFINITIVE AGREEMENT.

On December 22, 2004, the Compensation Committee of the Board of Directors (the "Compensation Committee") of Mercury Computer Systems, Inc. (the "Company") approved a Long Term Incentive Plan (the "Plan"). The Plan is intended to create incentives for certain executive officers and key employees of the Company by (i) aligning executive incentive compensation with increases in stockholder value over the long term, and (ii) using equity compensation as a retention tool. Under the Plan, the Compensation Committee will establish threshold and target amounts of certain performance measures for each fiscal year. The performance measures will be based upon operating income as a percentage of sales revenue and revenue growth year over year.

Each participant in the Plan will receive a target award for the fiscal year which will be a percentage of his or her base salary at the beginning of that fiscal year. Under the Plan, unless otherwise provided by the Compensation Committee, no annual payments will be made if the operating income as a percent of sales aspect of the performance measures and the threshold level of the revenue growth aspect of the performance measures have not been met for the fiscal year. Annual awards to participants will vary (from 75% to 175% of target award) depending upon the achievement of the revenue growth target for the related fiscal year.

One-half of each annual award earned by a participant under the Plan will be paid in cash, with the remainder to be paid in the form of restricted stock or restricted stock units settled in shares as determined by the Compensation Committee, with vesting over time as set forth in the award agreement. Shares will be issued from the Company's 1997 Stock Option Plan.

ITEM 9.01 FINANCIAL STATEMENTS AND EXHIBITS.

(c) Exhibits. The following exhibits are filed with this Current Report on Form 8-K:

Exhibit No.	Description	
		
10.1	Long Term Incentive Plan of Mercury Computer Systems, Inc.	

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.

MERCURY COMPUTER SYSTEMS, INC.

Dated: December 23, 2004

By: /s/ Joseph M. Hartnett

Joseph M. Hartnett Vice President, Controller and Chief Accounting Officer

EXHIBIT INDEX

Exhibit No.	Description
10.1	Long Term Incentive Plan of Mercury Computer Systems, Inc.

MERCURY COMPUTER SYSTEMS, INC. LONG TERM INCENTIVE PLAN

- 1. Purpose. This Plan is intended to create incentives for certain executive officers and key employees of the Company to allow the Company to attract and retain in its employ persons who will contribute to the future success of the Company. It is further the intent of the Company that Awards made under this Plan be used to achieve the twin goals of (i) aligning executive incentive compensation with increases in stockholder value over the long term, and (ii) using equity compensation as a tool to retain key employees. In furtherance of the second goal, it is the intention of the Company that fifty percent (50%) of each Award made under this Plan will be made in the form of either restricted stock or restricted stock units, with time-based vesting over a period to be determined by the Committee
- 2. Definitions. Capitalized terms not otherwise defined herein shall have the meanings set forth below:
 - 2.1 "Annual Bonus Target Award" shall mean, for any Participant, that award made under the Company's Annual Bonus Plan.
 - 2.2 "Annual Bonus Plan" shall mean the Mercury Computer Systems, Inc. Annual Bonus Plan.
 - 2.3 "Award" shall mean, for any Participant, actual payment in cash or restricted equity at the end of the Performance Period.
- 2.4 "Committee" shall mean those members of the Compensation Committee of the Board of Directors of the Company who are "non-employee directors" as such term is defined under Rule 16b-3 promulgated under the Securities Exchange Act of 1934, as amended.
 - 2.5 "Company" shall mean Mercury Computer Systems, Inc.
 - 2.6 "Effective Date" shall mean July 1, 2004.
 - 2.7 "Fiscal Year" shall mean the fiscal year of the Company, which is the 12-month period ending June 30 of each year.
- 2.8 "Participant" shall mean any executive officer or any key employee recommended by the Chief Executive Officer and approved by the Committee pursuant to Section 4 to participate herein with respect to a Performance Period.
- 2.9 "Performance Measure" for any Performance Period shall mean (i) operating income as a percentage of sales revenue and (ii) revenue growth year over year.
 - 2.10 "Performance Period" shall mean each Fiscal Year of the Company. The initial Performance Period ends on June 30, 2005.
 - 2.11 "Plan" shall mean the Mercury Computer Systems, Inc. Long Term Incentive Plan, as amended from time to time.
 - 2.12 "Share" shall mean a share of the common stock, par value \$.01 per share, of the Company.
 - 2.13 "Stock Option Plan" shall mean the Mercury Computer Systems, Inc. 1997 Stock Option Plan, as amended and restated.
- 2.14 "Target Award" shall mean, for any Participant, a percentage of his or her base salary at the beginning of a Performance Period. The percentage shall be identical to the Participant's Annual Bonus Target percentage.
- 3. Administration. The Committee shall have sole discretionary power to interpret the provisions of this Plan, to administer and make all decisions and exercise all rights of the Company with respect to this Plan. The Committee shall have final authority to apply the provisions of the Plan and determine, in its sole discretion, the amount of the Awards to be paid or allocated to Participants hereunder and shall also have the exclusive discretionary authority to make all other determinations (including, without limitation, the

interpretation and construction of the Plan and the determination of relevant facts) regarding the entitlement to benefits hereunder and the amount of benefits to be paid from the Plan. The Committee's exercise of this discretionary authority shall at all times be in accordance with the terms of the Plan and shall be entitled to deference upon review by any court, agency or other entity empowered to review its decision, and shall be enforced provided that it is not arbitrary, capricious or fraudulent.

- 4. *Eligibility*. For each Performance Period, those executive officers and key employees recommended by the Chief Executive Officer and approved by the Committee shall be Participants. The selection of an individual to be a Participant in any one Performance Period does not entitle the individual to be a Participant in any other Performance Period. A newly hired executive may be eligible to be selected as a Participant if he or she is hired prior to January 1 of a Performance Period. Any Participant who is not a Participant for the entire Performance Period, including a newly hired or promoted Participant, shall receive a pro rated Target Award based on his or her period of participation.
- 5. Performance Measure and Awards
- 5.1 *Performance Measure*. Within the first 90 days of a Performance Period, the Committee shall establish the threshold and target amounts of the Performance Measure for the Performance Period. Such amounts shall be set forth in an exhibit to the Plan.
 - 5.2 Granting of Awards. Each Participant shall receive a Target Award for a Performance Period.
- 5.3 Nature of Awards. The Target Awards granted under this Plan shall be used solely as a device for the measurement and determination of certain compensation to be paid to each Participant as provided herein. Awards shall not constitute or be treated as property or as a trust fund of any kind or as capital stock of the Company, stock options or other form of equity or security until they are paid out in the form of cash or restricted stock or restricted stock units.

6. Payments.

- 6.1 Committee Certification. No annual payments shall be made if the operating income as a percent of sales aspect of the Performance Measure has not been met for a Performance Period. If the operating income as a percent of sale aspect of the Performance Measure and at least the threshold level of the revenue growth aspect of the Performance Measure have been met for a Performance Period, the amount of the annual Award will be made pursuant to the provisions of Section 6.2. Notwithstanding the foregoing, the Committee retains the discretion to increase Awards and to provide for payment of Awards even if the Performance Measure has not been met for a Performance Period.
- 6.2 Annual Awards to Participants. The annual Awards to Participants at the end of each Performance Period will vary depending upon the achievement of the revenue growth target for such Performance Period as set forth below:

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If Revenue Growth does not meet the Threshold Level:	0%
If Revenue Growth meets the Threshold Level:	75%
If Revenue Growth meets the Target Level:	100%

Percentage of Target Award

For revenue growth between the Threshold and the Target Levels, the Award will be increased above the threshold level for additional growth in revenue as follows:

At 96%, 80% of Target Award At 97%, 85% of Target Award At 98%, 90% of Target Award At 99%, 95% of Target Award

For revenue growth above Target Level, the Award will be increased by 3.75 percent for each one percentage point improvement in revenue growth, up to a maximum of 20 percentage points above Target Level. Actual results will be rounded up or down to the nearest whole percentage point. By way of example only, if revenue growth is at 97 percent of Target, the Award will be 85 percent of the Target Award, and if revenue growth is at 15 percentage points above Target, the Award will be 156.25 percent of the Target Award.

Fifty percent of the annual Award to each Participant will be paid to such Participant in cash within 60 days after the end of the Performance Period. The remaining 50 percent of the annual Award will be made in the form of restricted stock or restricted stock units settled in Shares as determined by the Committee, with vesting over time as set forth in the award agreement. The conversion of dollar amounts of the 50 percent of the annual Award to determine the number of restricted stock or restricted stock units will be based on the fair market value of a Share on the date of grant. Shares will be issued from the Stock Option Plan.

7. Forfeiture.

- (a) Unless otherwise determined by the Committee, a Participant whose employment with the Company terminates for any reason prior to fulfilling the vesting requirements for his or her restricted stock or restricted stock units hereunder shall forfeit all rights to his or her restricted stock or restricted stock units that remain unvested on his or her termination date. A Participant who becomes ineligible to participate in the Plan during a Performance Period as a result of a change in position will continue to vest in any restricted stock or restricted stock unit previously awarded.
- (b) If during a Performance Period a Participant is terminated for cause, is in breach of his or her employment agreement or voluntarily terminates his or her employment, he or she will lose any right to receive any Awards not yet paid. If during a Performance Period a Participant dies, becomes disabled (within the meaning of Section 22(e)(3) of the Code), retires after attaining the minimum age, completing the minimum years of service and satisfying all other conditions specified for retirement status under the Company's Retirement Policy Statement, becomes ineligible to participate in the Plan as a result of a change in position or is involuntarily terminated by the Company, he or she shall receive a pro rata portion of his or her annual Award payable in cash under Section 6.2 based upon his or her actual length of participation period, but he or she shall have no right to receive any annual Award payable in Shares.
- 8. Amendment or Termination of Plan. The Compensation Committee may amend or terminate this Plan at any time or from time to time; provided, however, that no such amendment or termination shall, without the written consent of the Participants, in any material adverse way affect the rights of a Participant with respect to benefits earned prior to the date of amendment or termination.
- 9. Limitation of Company's Liability. Subject to its obligation to make payments as provided for hereunder, neither the Company nor any person acting on behalf of the Company shall be liable for any act performed or the failure to perform any act with respect to this Plan, except in the event that there has been a judicial determination of willful misconduct on the part of the Company or such person. The Company is under no obligation to fund any of the payments required to be made hereunder in advance of their actual payment or to establish any reserves with respect to this Plan. Any benefits which become payable hereunder shall be paid from the general assets of the Company. No Participant, or his or her beneficiary or beneficiaries, shall have any right, other than the right of an unsecured general creditor, against the Company in respect of the benefits to be paid hereunder.
- 10. Withholding of Tax. Anything to the contrary notwithstanding, all payments required to be made by the Company hereunder shall be subject to the withholding of such amounts as the Company reasonably may determine that it is required to withhold pursuant to applicable federal, state or local law or regulation. Withholding can be made in the form of Shares up to the minimum withholding amount.
- 11. Assignability. Except as otherwise provided by law, no benefit hereunder shall be assignable, or subject to alienation, garnishment, execution or levy of any kind, and any attempt to cause any benefit to be so subject shall be void.
- 12. No Contract for Continuing Services. This Plan shall not be construed as creating any contract for continued services between the Company and any Participant and nothing herein contained shall give any Participant the right to be retained as an employee of the Company.
- 13. Governing Law. This Plan shall be construed, administered, and enforced in accordance with the laws of the Commonwealth of Massachusetts.
- 14. *Non-Exclusivity*. The Plan does not limit the authority of the Company, the Committee, or any subsidiary of the Company, to grant Awards or authorize any other compensation under any other plan or authority, including, without limitation, Awards or other compensation based on the same Performance Measure used under the Plan. In addition, executives not selected to participate in the Plan may participate in other plans of the Company.