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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, d.c. 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 20, 2010**

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**CRYOLIFE, INC.**

(Exact name of registrant as specified in its charter)

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**Florida**  
(State or Other Jurisdiction  
of Incorporation)

**1-13165**  
(Commission File Number)

**59-2417093**  
(IRS Employer  
Identification No.)

**1655 Roberts Boulevard, N.W., Kennesaw, Georgia 30144**  
(Address of principal executive office) (zip code)

**Registrant's telephone number, including area code: (770) 419-3355**

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(Former name or former address, if changed since last report)

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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))
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## **Section 5 Corporate Governance and Management**

### **Item 5.02 Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers.**

On December 20, 2010, the Compensation Committee of the Board of Directors of CryoLife, Inc. (“CryoLife” or the “Company”) adopted the CryoLife, Inc. Executive Deferred Compensation Plan (the “Plan”), effective December 1, 2010.

The Plan allows certain officers and employees of CryoLife (“Plan Participants”), including the named executive officers disclosed in the Summary Compensation Table in CryoLife’s 2010 Proxy Statement, to defer receipt of some or all of the Plan Participant’s salary and/or the cash portion of any bonus awarded to Plan Participants pursuant to CryoLife’s Executive Incentive Plan or in lieu thereof. The Plan’s Administrative Committee establishes the maximum and minimum percentages of bonus awards that Plan Participants may defer in each Plan year and Plan Participants may elect to defer all or a portion of their salary under the Plan. While Plan Participants establish their respective deferral amounts prior to each Plan year, hardship withdrawals during any Plan year may occur upon the occurrence of an unforeseeable emergency for a particular Plan Participant or if a Plan Participant receives a hardship distribution under the Company’s 401(k) plan.

The Plan provides for tax-deferred growth of deferred compensation and, pursuant to the terms of the Plan, the Company agrees to return the deferred amounts, either credited or debited with gains and/or losses based on investment fund options chosen by each respective Plan Participant, to the Plan Participants upon distribution. The Plan does not provide for an investment option that pays an above-market interest rate. Distribution of all deferred compensation, including any gains or losses, occurs upon death, disability, retirement or termination. Also, a Plan Participant may elect to receive distributions while still employed by the Company if at least two years has elapsed from the Plan year in which the deferred amounts would have otherwise been paid to the Plan Participant if not for the deferral. Distributions made while the Plan Participant is still employed by CryoLife and distributions made pursuant to termination will be paid in lump sum to the Plan Participant. With respect to death, disability and retirement, Plan Participants may choose to receive the distribution in lump sum, quarterly or annual installments for a specified period, or a combination thereof.

Amounts owing to Plan Participants will be unsecured obligations of CryoLife. CryoLife will establish a rabbi trust in which it will make contributions to fund its obligations under the Plan. Pursuant to the terms of the trust, CryoLife will be required to make contributions each year to fully match its obligations under the Plan.

**SIGNATURES**

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

CRYOLIFE, INC.

Date: December 22, 2010

By: /s/ D. A. Lee

Name: D. Ashley Lee

Title: Executive Vice President, Chief  
Operating Officer and Chief  
Financial Officer

