SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE TO

Tender Offer Statement under Section 14(d)(1) or 13(e)(1)

of the Securities Exchange Act of 1934

CTI MOLECULAR IMAGING, INC.

(Name of Subject Company (issuer))

MI MERGER CO.

SIEMENS MEDICAL SOLUTIONS USA, INC.

SIEMENS AKTIENGESELLSCHAFT

(Names of Filing Persons (offeror))

Common Stock, Par Value \$0.01 Per Share

(Title of Class of Securities)

22943D105

(CUSIP Number of Class of Securities)

Kenneth R. Meyers, Esq.

Siemens Corporation

153 East 53rd Street

New York, New York 10022

(Name, address and telephone number of person authorized to receive notices

and communications on behalf of filing persons)

Copy to:

Stephen M. Besen, Esq.

Shearman & Sterling LLP

599 Lexington Avenue

New York, New York 10022

(212) 848-4000

Calculation of Filing Fee

Transaction valuation* \$1,027,149,773.50

Amount of filing fee** \$120,895.53

Form or Registration No.: Not Applicable

Date Filed: Not Applicable

Check the box if the filing relates solely to preliminary communications made before the commencement of a tender offer.

^{*} Estimated for purposes of calculating the amount of the filing fee only. Calculated by multiplying \$20.50, the per share tender offer price, by 50,104,867, the sum of the 47,956,322 issued and outstanding shares of common stock as of March 17, 2005 and the 2,148,545 shares of common stock subject to vested options, warrants and deferred stock units.

^{**} Calculated as 0.011770% of the transaction value.

Check the box if any part of the fee is offset as provided by Rule 0-11(a)(2) and identify the filing with which the offsetting fee was previously paid. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.

Amount Previously Paid: Not Applicable

Filing Party: Not Applicable

Check the appropriate boxes to designate any transactions to which the statement relates:

- x third-party tender offer subject to Rule 14d-1.
- " issuer tender offer subject to Rule 13e-4.
- " going-private transaction subject to Rule 13e-3.
- " amendment to Schedule 13D under Rule 13d-2.

Check the following box if the filing is a final amendment reporting the results of the tender offer: "

This Tender Offer Statement on Schedule TO (this Schedule TO), is filed by Siemens Aktiengesellschaft, a corporation organized under the laws of the Federal Republic of Germany (Siemens AG), Siemens Medical Solutions USA, Inc., a Delaware corporation (Parent) and an indirect wholly owned subsidiary of Siemens AG, and MI Merger Co., a Delaware corporation (Purchaser) and a wholly owned subsidiary of Parent. This Schedule TO relates to the offer by Purchaser to purchase all the shares of common stock, par value \$0.01 per share, including the associated Series C Junior Participating Preferred Stock Purchase Rights issued pursuant to the Shareholder Protection Rights Agreement, dated as of May 21, 2002, between the Company (defined below) and SunTrust Bank, as rights agent (together, the Shares), of CTI Molecular Imaging, Inc., a Delaware corporation (the Company), that are issued and outstanding for \$20.50 per Share, net to the seller in cash, without interest, upon the terms and subject to the conditions set forth in the Offer to Purchase dated April 1, 2005 (the Offer to Purchase) and in the related Letter of Transmittal, copies of which are attached as Exhibits (a)(1) and (a)(2) hereto. The information set forth in the Offer to Purchase and the related Letter of Transmittal is incorporated herein by reference with respect to Items 1-9 and Item 11 of this Schedule TO. The Agreement and Plan of Merger, dated as of March 18, 2005, among Parent, Purchaser and the Company, a copy of which is attached as Exhibit (d)(1) hereto, the Stockholders Support Agreements, dated as of March 18, 2005, among Parent and Purchaser and Terry D. Douglass, Ph.D., Ronald Nutt, Ph.D., Robert E. Nutt and Michael Phelps, Ph.D. and certain persons affiliated with them, copies of which are attached as Exhibits (d)(2) through (d)(5) hereto, and the Stock Purchase, Reorganization and Joint Venture Agreement, dated as of December 10, 1987, and amended March 31, 1995, June 30, 1997, April 2001 and March 20, 2002 by and among CTI Group, Inc., CTI PET Systems, Inc., Dr. Terry D. Douglass, Dr. Ronald Nutt, Michael C. Crabtree, J. Kelly Milam and Siemens Gammasonics, Inc., a copy of which is attached as Exhibit (d)(6) hereto, are incorporated herein by reference with respect to Item 5 and Item 11 of this Schedule TO. The Complaint, City of Monroe Employees Retirement System, et al. v. CTI Molecular Imaging, Inc., et al., Case No. 163762-3, filed on March 22, 2005, in the Chancery Court of Knox County in the State of Tennessee, a copy of which is attached as Exhibit (d)(8) hereto, is incorporated herein by reference with respect to Item 11 of this Schedule TO.

Item 10. Financial Statements of Certain Bidders.

Not applicable.

Item 12. Material to Be Filed as Exhibits.

- (a)(1) Offer to Purchase, dated April 1, 2005.
- (a)(2) Form of Letter of Transmittal.
- (a)(3) Form of Notice of Guaranteed Delivery.
- (a)(4) Form of Letter from Goldman, Sachs & Co. to Brokers, Dealers, Commercial Banks, Trust Companies and Other Nominees.
- (a)(5) Form of Letter from Brokers, Dealers, Commercial Banks, Trust Companies and Nominees to Clients.
- (a)(6) Form of Guidelines for Certification of Taxpayer Identification Number on Substitute Form W-9.
- (a)(7) Summary Advertisement as published in The Wall Street Journal on April 1, 2005.
- (a)(8) Joint Press Release issued by Parent and the Company on March 18, 2005 (incorporated by reference to Exhibit 99.1 filed under cover of Schedule TO by Siemens AG with the Securities and Exchange Commission on March 18, 2005).
- (a)(9) Joint Press Release issued by Parent and the Company on April 1, 2005.
- (b) None.
- (d)(1) Agreement and Plan of Merger, dated as of March 18, 2005, among Parent, Purchaser and the Company (incorporated by reference to Exhibit 2.1 to the Current Report on Form 8-K filed by the Company with the Securities and Exchange Commission on March 24, 2005).

- (d)(2) Stockholders Support Agreement, dated as of March 18, 2005, among Parent, Purchaser and Terry D. Douglass, Ph.D., Revocable Charitable Trust of Terry and Rosann Douglass, Vision Investments, LLC, ProVision Foundation and Rosann B. Douglass (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by the Company with the Securities and Exchange Commission on March 24, 2005).
- (d)(3) Stockholders Support Agreement, dated as of March 18, 2005, among Parent, Purchaser and Ronald Nutt, Ph.D., Earleene Nutt, Ron & Earleene Nutt Irrevocable Trust, Grantor Retained Annuity Trust For Ronald Nutt, RN Investments, LLC, Randii Nichole Goble Present Interest Trust, Ronald James Goble Present Interest Trust, Zoe Eve Nutt Present Interest Trust, Richard Alexander Roble Present Interest Trust, Randall Carter Nutt Present Interest Trust, Robert Daniel Nutt Present Interest Trust and John Brooks Nutt Present Interest Trust (incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K filed by the Company with the Securities and Exchange Commission on March 24, 2005).
- (d)(4) Stockholders Support Agreement, dated as of March 18, 2005, among Parent, Purchaser and Robert E. Nutt and Robert E. Nutt Irrevocable Trust (incorporated by reference to Exhibit 10.4 to the Current Report on Form 8-K filed by the Company with the Securities and Exchange Commission on March 24, 2005).
- (d)(5) Stockholders Support Agreement, dated as of March 18, 2005, among Parent, Purchaser and Michael Phelps, Ph.D. and Patricia E. Phelps (incorporated by reference to Exhibit 10.3 to the Current Report on Form 8-K filed by the Company with the Securities and Exchange Commission on March 24, 2005).
- (d)(6) Stock Purchase, Reorganization and Joint Venture Agreement, dated as of December 10, 1987, and amended March 31, 1995, June 30, 1997, April 2001 and March 20, 2002 by and among CTI Group, Inc., CTI PET Systems, Inc., Dr. Terry D. Douglass, Dr. Ronald Nutt, Michael C. Crabtree, J. Kelly Milam and Siemens Gammasonics, Inc. (incorporated by reference to Exhibit 10.1 to the Registration Statement on Form S-1 filed by the Company with the Securities and Exchange Commission on April 5, 2002).
- (d)(7) Confidentiality Agreement, dated March 8, 2005, between the Company and Parent.
- (d)(8) Complaint, City of Monroe Employees Retirement System, et al. v. CTI Molecular Imaging, Inc., et al., Case No. 163762-3, filed on March 22, 2005, in the Chancery Court of Knox County in the State of Tennessee.
- (g) None.
- (h) None.

Item 13. Information Required by Schedule 13E-3.

Not applicable.

After due inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Dated: April 1, 2005

MI MERGER CO.

By: /s/ James R. Ruger

Name: James R. Ruger

Title: Vice President and Treasurer

By: /s/ Kenneth R. Meyers

Name: Kenneth R. Meyers

Title: Secretary

After due inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Dated: April 1, 2005

SIEMENS MEDICAL SOLUTIONS USA, INC.

By: /s/ Hermann Requardt

Name: Hermann Requardt Title: Vice Chairman

By: /s/ James R. Ruger

Name: James R. Ruger Title: Secretary

After due inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Dated: April 1, 2005

SIEMENS AKTIENGESELLSCHAFT

By: /s/ Hermann Requardt

Name: Hermann Requardt

Title: Group Executive Vice President

By: /s/ Goetz Steinhardt

Name: Goetz Steinhardt

Title: Group Executive Vice President

EXHIBIT INDEX

Exhibit

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(g)	None.
(h)	None.