

Isabelle Warren John
 Form 4
 February 23, 2010

FORM 4 UNITED STATES SECURITIES AND EXCHANGE COMMISSION
 Washington, D.C. 20549

OMB APPROVAL

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STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

1. Name and Address of Reporting Person *
 Isabelle Warren John

2. Issuer Name and Ticker or Trading Symbol
 SENESCO TECHNOLOGIES INC
 [SNT]

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

(Last) (First) (Middle)
 303 GEORGE STREET, SUITE 420
 (Street)

3. Date of Earliest Transaction
 (Month/Day/Year)
 02/19/2010

Director 10% Owner
 Officer (give title below) Other (specify below)

NEW BRUNSWICK, NJ 08901
 (City) (State) (Zip)

4. If Amendment, Date Original Filed(Month/Day/Year)

6. Individual or Joint/Group Filing(Check Applicable Line)
 Form filed by One Reporting Person
 Form filed by More than One Reporting Person

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

| 1. Title of Security (Instr. 3) | 2. Transaction Date (Month/Day/Year) | 2A. Deemed Execution Date, if any (Month/Day/Year) | 3. Transaction Code (Instr. 8) | 4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5) | 5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4) | 6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 7. Nature of Ownership (Instr. 4) |
|---------------------------------|--------------------------------------|--|--------------------------------|---|---|--|-----------------------------------|
| | | | Code | V | Amount | (A) or (D) | Price |
| Common Stock | 02/19/2010 | | P | | 16,745 | A | \$ 0 (1) |
| | | | | | 18,967 | D | |

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

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SEC 1474
 (9-02)

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

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| 1. Title of Derivative Security (Instr. 3) | 2. Conversion or Exercise Price of Derivative Security | 3. Transaction Date (Month/Day/Year) | 3A. Deemed Execution Date, if any (Month/Day/Year) | 4. Transaction Code (Instr. 8) | 5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5) | 6. Date Exercisable and Expiration Date (Month/Day/Year) | 7. Title and Amount Underlying Securities (Instr. 3 and 4) | Amount |
|--|--|--------------------------------------|--|--------------------------------|---|--|--|---------------|
| | | | | Code V (A) (D) | | Date Exercisable Expiration Date | Title | Number Shares |
| Common Stock Warrant | \$ 1.01 | 02/19/2010 | | P | 9,691 | 02/19/2010 06/30/2012 | Common Stock | 9,691 |
| Common Stock Warrant | \$ 1.01 | 02/19/2010 | | P | 16,152 | 02/19/2010 12/20/2012 | Common Stock | 16,152 |
| Common Stock Warrant | \$ 1.01 | 02/19/2010 | | P | 10,768 | 02/19/2010 06/30/2013 | Common Stock | 10,768 |
| Common Stock Warrant | \$ 0.83 | 02/19/2010 | | P | 16,152 | 02/19/2010 12/20/2012 | Common Stock | 16,152 |
| Common Stock Warrant | \$ 0.83 | 02/19/2010 | | P | 10,768 | 02/19/2010 06/30/2013 | Common Stock | 10,768 |
| Convertible Debenture Due 12/31/2010 | \$ 0.22 ⁽²⁾ | 02/19/2010 | | P | \$ 64,607 | 02/19/2010 12/31/2010 | Common Stock | 287,607 |

Reporting Owners

| Reporting Owner Name / Address | Relationships | | | |
|---|---------------|-----------|---------|-------|
| | Director | 10% Owner | Officer | Other |
| Isabelle Warren John 303 GEORGE STREET SUITE 420 NEW BRUNSWICK, NJ 08901 | X | | | |

Signatures

Warren J.
Isabelle 02/23/2010

**Signature of Reporting Person

Date

Explanation of Responses:

* If the form is filed by more than one reporting person, *see* Instruction 4(b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations. *See* 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

(1) Mr. Isabelle entered into agreements to purchase an aggregate of 16,745 shares of common stock, 63,531 common stock warrants and \$64,607 of convertible debentures. The total purchase price was \$11,500, which was not allocated among the various components.

The conversion rate used is the rate that the convertible debentures may convert at as of February 19, 2010. However, the conversion rate
(2) may change as the convertible debentures convert at a floating conversion rate equal to the lower of \$0.83, subject to adjustment, or 80% of the lowest daily VWAP for the five day period immediately preceding the conversion date.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *see* Instruction 6 for procedure.

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