

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549**

SCHEDULE 13G

(Amendment No. 3)*

Under the Securities Exchange Act of 1934

Senesco Technologies, Inc.

(Name of Issuer)

Common Stock

(Title of Class of Securities)

817208408

(CUSIP Number)

December 31, 2004

(Date of Event Which Requires Filing of This Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

☐ Rule 13d-1(b)

☒ Rule 13d-1(c)

☐ Rule 13d-1(d)

* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

1. NAME OF REPORTING PERSON/S.S. OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSON

SENECA CAPITAL, L.P.

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*

(A) ☐

(B) ☒

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION

DELAWARE

5. SOLE VOTING POWER

0

6. SHARED VOTING POWER

1,273,611

7. SOLE DISPOSITIVE POWER

0

8. SHARED DISPOSITIVE POWER

1,273,611

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

1,273,611

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*

☐

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

8.6%

12. TYPE OF REPORTING PERSON*

PN

1. NAME OF REPORTING PERSON/S.S. OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSON

SENECA CAPITAL ADVISORS, LLC

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*

(A) ☐

(B) ☒

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION

DELAWARE

5. SOLE VOTING POWER

0

6. SHARED VOTING POWER

1,273,611

7. SOLE DISPOSITIVE POWER

0

8. SHARED DISPOSITIVE POWER

1,273,611

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

1,273,611

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*

☐

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

8.6%

12. TYPE OF REPORTING PERSON

OO - LIMITED LIABILITY COMPANY

1. NAME OF REPORTING PERSON/S.S. OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSON

DOUGLAS A. HIRSCH

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*

(A) ☐

(B) ☒

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION

USA

5. SOLE VOTING POWER

0

6. SHARED VOTING POWER

1,273,611

7. SOLE DISPOSITIVE POWER

0

8. SHARED DISPOSITIVE POWER

1,273,611

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

1,273,611

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*

☐

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

8.6%

12. TYPE OF REPORTING PERSON

IN

ITEM 1. (a) Name of Issuer:
Senesco Technologies, Inc.

(b) Address of Issuer's Principal Executive Offices:
303 George Street, Suite 420, New Brunswick, NJ 08901

ITEM 2. (a) Name of Persons Filing:

(b) Address or principal business office or, if none, residence:

(c) Citizenship:
Seneca Capital, L.P.
950 Third Avenue, 29th Floor
New York, NY 10022
(Delaware limited partnership)
Seneca Capital Advisors, LLC
950 Third Avenue, 29th Floor
New York, NY 10022
(Delaware limited liability company)
Douglas A. Hirsch
c/o Seneca Capital
950 Third Avenue, 29th Floor
New York, NY 10022
(United States Citizen)

ITEM 2 (d). Title of Class of Securities:
Common stock, par value \$0.01 per share

ITEM 2 (e). CUSIP Number:
817208408

ITEM 3. IF THIS STATEMENT IS FILED PURSUANT TO RULE 13D-1(B), OR 13D-2(B), CHECK WHETHER THE PERSON FILING IS A:

- (a) ☐ Broker or Dealer registered under Section 15 of the Act (15 U.S.C. 78o).
- (b) ☐ Bank as defined in section 3(a)(6) of the Act (15 U.S.C. 78c).
- (c) ☐ Insurance Company as defined in section 3(a)(19) of the Act (15 U.S.C. 78c).
- (d) ☐ Investment Company registered under section 8 of the Investment Company Act of 1940 (15 U.S.C. 80a-8).
- (e) ☐ Investment Adviser registered under section 203 of the Investment Advisers Act or under the laws of any State
- (f) ☐ Employee Benefit Plan, Pension fund which is subject to the provisions of the Employee Retirement Income Security Act of 1974 or Endowment Fund; see Section 240.13d-1(b)(1)(ii)(F)
- (g) ☐ A Parent Holding Company or control person, in accordance with Section 240.13d-1(b)(ii)(G)(Note: See Item 7)
- (h) ☐ A Savings Association as defined in Section 3(b) of the Federal Deposit Insurance Act (12 U.S.C. 1813)
- (i) ☐ A Church Plan that is excluded from the definition of an investment company under Section 3(c)(14) of the Investment Company Act of 1940 (15 U.S.C. 80a-3)
- (j) ☐ Group, in accordance with Section 240.13d-1(b)(1)(ii)(J)

ITEM 4. OWNERSHIP

Provide the following information regarding the aggregate number and percentage of the class of securities of the issuer identified in Item 1.

SENECA CAPITAL, L.P.

- (a) Amount Beneficially Owned: 1,273,611
- (b) Percent of Class: 8.6%
- (c) Number of shares as to which such person has:
 - (i) sole power to vote or to direct the vote: 0
 - (ii) shared power to vote or to direct the vote: 1,273,611
 - (iii) sole power to dispose or to direct the disposition of: 0
 - (iv) shared power to dispose or to direct the disposition of: 1,273,611

SENECA CAPITAL ADVISORS, LLC (1)

- (a) Amount Beneficially Owned: 1,273,611
- (b) Percent of Class: 8.6%
- (c) Number of shares as to which such person has:
 - (i) sole power to vote or to direct the vote: 0
 - (ii) shared power to vote or to direct the vote: 1,273,611
 - (iii) sole power to dispose or to direct the disposition of: 0
 - (iv) shared power to dispose or to direct the disposition of: 1,273,611

DOUGLAS A. HIRSCH (2)

- (a) Amount Beneficially Owned: 1,273,611
- (b) Percent of Class: 8.6%
- (c) Number of shares as to which such person has:
 - (i) sole power to vote or to direct the vote: 0
 - (ii) shared power to vote or to direct the vote: 1,273,611
 - (iii) sole power to dispose or to direct the disposition of: 0
 - (iv) shared power to dispose or to direct the disposition of: 1,273,611

- (1) Shares reported for Seneca Capital Advisors, LLC represent shares beneficially owned by Seneca Capital, L.P. Seneca Capital Advisors, LLC is the sole General Partner of Seneca Capital, L.P.
- (2) Shares reported for Douglas A. Hirsch represent shares beneficially owned by Seneca Capital L.P. which may be deemed to be controlled by Mr. Hirsch because he is the Manager of Seneca Capital Advisors, LLC (the sole General Partner of Seneca Capital, L.P.).

ITEM 5. OWNERSHIP OF FIVE PERCENT OR LESS OF A CLASS

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following ☐.

NOT APPLICABLE.

ITEM 6. OWNERSHIP OF MORE THAN FIVE PERCENT ON BEHALF OF ANOTHER PERSON

If any other person is known to have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, such securities, a statement to that effect should be included in response to this item and, if such interest relates to more than five percent of the class, such person should be identified. A listing of the shareholders of an investment company registered under the Investment Company Act of 1940 or the beneficiaries of employees benefit plan, pension fund or endowment fund is not required.

NOT APPLICABLE.

ITEM 7. IDENTIFICATION AND CLASSIFICATION OF THE SUBSIDIARY WHICH ACQUIRED THE SECURITY BEING REPORTED ON BY THE PARENT HOLDING COMPANY

If a parent holding company has filed this schedule, pursuant to Rule 13d-1(b)(ii)(G), so indicate under Item 3(g) and attach an exhibit stating the identity and the Item 3 classification of the relevant subsidiary. If a parent holding company has filed this schedule pursuant to Rule 13d-1(c), attach an exhibit stating the identification of the relevant subsidiary.

NOT APPLICABLE.

ITEM 8. IDENTIFICATION AND CLASSIFICATION OF MEMBERS OF THE GROUP

If a group has filed this schedule pursuant to Rule 13d-1(b)(ii)(J), so indicate under Item 3(h) and attach an exhibit stating the identity and Item 3 classification of each member of the group. If a group has filed this schedule pursuant to Rule 13d-1(d), attach an exhibit stating the identity of each member of the group.

NOT APPLICABLE.

ITEM 9. NOTICE OF DISSOLUTION OF GROUP

Notice of dissolution of a group may be furnished as an exhibit stating the date of the dissolution and that all further filings with respect to transactions in the security report on will be filed, if required, by members of the group, in their individual capacity.

NOT APPLICABLE.

ITEM 10. CERTIFICATION

By signing below, I certify that, to the best of my knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of and do not have the effect of changing or influencing the control of the issuer of such securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

SIGNATURE

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

Date: February 14, 2005

SENECA CAPITAL, L.P.

By Seneca Capital Advisors, LLC, its General Partner

By: /s/ Douglas A. Hirsch

Douglas A. Hirsch, Its Managing Member

SENECA CAPITAL ADVISORS, LLC

By: /s/ Douglas A. Hirsch

Douglas A. Hirsch, Its Managing Member

DOUGLAS A. HIRSCH

By: /s/ Douglas A. Hirsch

Douglas A. Hirsch, Individually