

Martin Susan H.
Form 4
April 27, 2012

FORM 4

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

OMB APPROVAL

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Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

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 *
Martin Susan H.

2. Issuer Name and Ticker or Trading Symbol
WISCONSIN ENERGY CORP
[WEC]

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

(Last) (First) (Middle)
231 WEST MICHIGAN STREET
(Street)

3. Date of Earliest Transaction (Month/Day/Year)
04/26/2012

____ Director
 Officer (give title below) Executive VP & General Counsel
____ 10% Owner
____ Other (specify below)

MILWAUKEE, WI 53203

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

(City) (State) (Zip)

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 | 04/26/2012 | | M | 3,000 A \$ 17.1 | 5,009.8479 | D | |
| Common Stock | 04/26/2012 | | S | 3,000 (1) D \$ 36.25 | 2,009.8479 | D | |
| Common Stock | | | | | 3,022.49 (2) | I | ERSP |

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

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SEC 1474 (9-02)

number.

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

| 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 (A) or Disposed of (D) (Instr. 3, 4, and 5) | 6. Date Exercisable and Expiration Date (Month/Day/Year) | 7. Title and Amount of Underlying Securities (Instr. 3 and 4) | 8. Amount or Number of Shares |
|--|--|--------------------------------------|--|--------------------------------|--|--|---|-------------------------------|
| Stock Option (right to buy) | \$ 17.1 | 04/26/2012 | | M | 3,000 | 01/18/2008 01/18/2015 | Common Stock | 3,000 |

Reporting Owners

| Reporting Owner Name / Address | Relationships | | | |
|--|---------------|-----------|--------------------------------|-------|
| | Director | 10% Owner | Officer | Other |
| Martin Susan H. 231 WEST MICHIGAN STREET MILWAUKEE, WI 53203 | | | Executive VP & General Counsel | |

Signatures

/s/ Joshua M. Erickson, as
Attorney-in-Fact
Date: 04/27/2012

**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) This transaction was effected pursuant to a Rule 10b5-1 trading plan adopted by the reporting person on February 9, 2012.
Includes shares acquired under Wisconsin Energy Corporation's Employee Retirement Savings Plan (ERSP) in transactions exempt from Section 16(b) pursuant to Rule 16b-3(c) and exempt from reporting pursuant to Rule 16a-3(f)(1)(i)(B). The number of shares in the ERSP attributable to any one participant varies with the price of the Common Stock. The information in this report is based on a plan statement dated as of March 31, 2012.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure. Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB number.