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2. Check the Appropriate Box if a Member of a Group (See Instructions):
- (a) Not Applicable
- (b)
3. SEC Use Only
4. Source of Funds (See Instructions): 00
5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e):
- Not Applicable
6. Citizenship or Place of Organization: United States
- Number of Shares Beneficially Owned by Each Reporting Person With
7. Sole Voting Power: 0
8. Shared Voting Power: 1,548,462*
9. Sole Dispositive Power: 0
10. Shared Dispositive Power: 1,548,462*_____
11. Aggregate Amount Beneficially Owned by Each Reporting Person: 1,548,462*
12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions): Not Applicable
13. Percent of Class Represented by Amount in Row (11): 7.1%*
14. Type of Reporting Person (See Instructions): IA, IN

* This is a joint filing by Austin W. Marx (Marx) and David M. Greenhouse (Greenhouse). Marx and Greenhouse share sole voting and investment power over 547,508 shares of Common Stock owned by Special Situations Cayman Fund, L.P., 80,668 shares of Common Stock owned by Special Situations Fund III, L.P. and 920,286 shares of Common Stock owned by Special Situations Fund III QP, L.P. See Items 2 and 4 of this Schedule for additional information.

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Item 1. Security and Issuer:

- (a) Peco II, Inc.
- (b) 1376 State Route 598, Galion, Ohio 44833

Item 2. (a) Name of Person Filing:

The persons filing this report are Austin W. Marx (Marx) and David M. Greenhouse (Greenhouse), who are the controlling principals of AWM Investment Company, Inc. (AWM), the general partner of and investment adviser to Special Situations Cayman Fund, L.P. (Cayman). AWM also serves as the general partner of MGP Advisers Limited Partnership (MGP), the general partner of and investment adviser to Special Situations Fund III, L.P. (SSF3) and Special Situations Fund III QP, L.P.* (SSFQP). (SSF3, SSFQP and Cayman will hereafter be referred to as, the Funds). The principal business of each Fund is to invest in equity and equity-related securities and other securities of any kind or nature.

*Pursuant to that certain Exchange Tender Offer described in the Schedule TO-I of the Special Situations Fund III, L.P. (SSF3) as filed by SSF3 with

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the Securities and Exchange Commission on November 17, 2005, SSF3 transferred the securities included in this Schedule 13D to Special Situations Fund III QP, L.P. (SSFQP) on December 31, 2005.

(b) Address of Principal Business Office or, if none, Residence:

The principal business address for Marxe and Greenhouse is 527 Madison Avenue, Suite 2600, New York, NY 10022.

(c) Citizenship:

Austin W. Marxe and David M. Greenhouse are United States citizens.

(d) Title of Class of Securities: Common Stock.

(e) CUSIP Number: 705221109.

Item 3. If this statement is filed pursuant to §240.13d-1(b) or 240.13d-2(b), check whether the person filing is a: Not Applicable

- (a) Broker or Dealer registered under section 15 of the Act;
- (b) Bank as defined in section 3(a) (6) of the Act;
- (c) Insurance Company as defined in section 3(a) (19) of the Act;
- (d) Investment Company registered under section 8 of the Investment Company Act of 1940;
- (e) An Investment Adviser in accordance with §240.13d-1(b) (I) (ii) (E);
- (f) An employee benefit plan or endowment fund in accordance with §240.13d-1(b) (I) (ii) (F);

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- (g) A parent holding company or control person in accordance with §240.13d-1(b) (1) (ii) (G);
- (h) A savings association as defined in Section 3(b) of the Federal Deposit Insurance Act;
- (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;
- (j) Group, in accordance with §240.13d-1(b) (1) (ii) (J).

Item 4. Ownership:

(a) Amount Beneficially Owned: Messrs. Marxe and Greenhouse beneficially own a total of 1,548,462 shares of Common Stock. This amount includes 547,508 shares of Common Stock owned by Cayman, 80,668 shares of Common Stock owned by SSF3 and 920,286 shares of Common Stock owned by SSFQP.

(b) Percent of Class: Messrs. Marxe and Greenhouse beneficially own 7.1% of the shares outstanding. Cayman owns 2.5% of the outstanding shares, SSF3 owns 0.4% of the outstanding shares and SSFQP owns 4.2% of the outstanding shares.

(c) Number of Shares as to which the person has:

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- (i) Sole power to vote or to direct the vote: 0
- (ii) Shared power to vote or to direct the vote: 1,548,462
- (iii) Sole power to dispose or to direct the disposition of: 0
- (iv) Shared power to dispose or to direct the disposition of:
1,548,462

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 ___.

Item 6. Ownership of More than Five Percent on Behalf of Another Person: Not Applicable.

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security being Reported on By the Parent Holding Company: Not Applicable.

Item 8. Identification and Classification of Members of the Group: Not applicable

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Item 9. Notices of Dissolution of Group: 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 acquired and are held in the ordinary course of business and were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the 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 certify that the information set forth in this statement is true, complete and correct.

Dated: February 13, 2006

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/s/ Austin W. Marxe
AUSTIN W. MARXE

/s/David M Greenhouse
DAVID M. GREENHOUSE

Attention: Intentional misstatements or omissions of fact constitute Federal criminal violations (See 18 U.S.C. 1001).

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JOINT FILING AGREEMENT

Austin W. Marxe and David M. Greenhouse hereby agree that the Schedule 13G to which this agreement is attached is filed on behalf of each of them.

/s/_Austin W. Marxe
Austin W. Marxe

/s/_David M. Greenhouse
David M. Greenhouse

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