

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

SCHEDULE 13G

Under the Securities Exchange Act of 1934
(Amendment No. 1)

MONOLITHIC PWR SYS INC

(Name of Issuer)

COM

(Title of Class of Securities)

609839105

(CUSIP Number)

May 31, 2010

(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 the disclosures provided in a prior cover page.

The information required in 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).

CUSIP No. 609839105

Person 1

1. (a) Names of Reporting Persons.
Wells Fargo and Company
(b) Tax ID
41-0449260

2. Check the Appropriate Box if a Member of a Group (See Instructions)
(a) ☐
(b) ☐

3. SEC Use Only

4. Citizenship or Place of Organization Delaware

Number of 5. Sole Voting Power 3,197,922
Shares

Beneficially 6. Shared Voting Power 1,384
Owned by

Each 7. Sole Dispositive Power 3,717,721
Reporting

Person With 8. Shared Dispositive Power 5,204

9. Aggregate Amount Beneficially Owned by Each Reporting Person 3,731,156

10. Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)

11. Percent of Class Represented by Amount in Row (9) 10.36 %

12. Type of Reporting Person (See Instructions)

HC

Item 1.

(a) Name of Issuer

MONOLITHIC PWR SYS INC

(b) Address of Issuer's Principal Executive Offices

6409 Guadalupe Mines Road, San Jose, CA 95120

Item 2.

(a) Name of Person Filing

Wells Fargo and Company

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

420 Montgomery Street, San Francisco, CA 94104

(c) Citizenship

Delaware

(d) Title of Class of Securities

COM

(e) CUSIP Number

609839105

Item 3. If this statement is filed pursuant to 240.13d-1(b) or 240.13d-2(b) or (c), check whether the person filing is a:

(a) ☐ Broker or dealer registered under section 15 of the Act (15 U.S.C. 78c)

(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) ☐ An investment adviser in accordance with 240.13d-1(b)(1)(ii)(E);
- (f) ☐ An employee benefit plan or endowment fund in accordance with 240.13d-1(b)(1)(ii)(F);
- (g) ☒ A parent holding company or control person in accordance with 240.13d-1(b)(1)(ii)(G);
- (h) ☐ A savings associations 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) ☐ A non-U.S.institution in accordance with 240.13d-1(b)(1)(ii)(J);
- (k) ☐ Group, in accordance with 240.13d-1(b)(1)(ii)(K).

If filing as a non-U.S.institution in accordance with 240.13d-1(b)(1)(ii)(J), please specify the type of institution: _____

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.

- (a) Amount beneficially owned: 3,731,156
- (b) Percent of class: 10.36%
- (c) Number of shares as to which the person has:
 - (i) Sole power to vote or to direct the vote 3,197,922
 - (ii) Shared power to vote or to direct the vote 1,384
 - (iii) Sole power to dispose or to direct the disposition of 3,717,721
 - (iv) Shared power to dispose or to direct the disposition of 5,204

Person 2

1. (a) Names of Reporting Persons.
Wells Capital Management Incorporated
(b) Tax ID
95-3692822
-

2. Check the Appropriate Box if a Member of a Group (See Instructions)
 - (a) ☐
 - (b) ☐
-

3. SEC Use Only
-

4. Citizenship or Place of Organization California

Number of Shares Beneficially Owned by Each Reporting Person With	5. Sole Voting Power 536,039
	6. Shared Voting Power 0
	7. Sole Dispositive Power 3,637,585
	8. Shared Dispositive Power 0
9. Aggregate Amount Beneficially Owned by Each Reporting Person 3,637,585	
10. Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)	
11. Percent of Class Represented by Amount in Row (9) 10.10 %	
12. Type of Reporting Person (See Instructions)	

IA

Item 1.

- (a) Name of Issuer
MONOLITHIC PWR SYS INC
- (b) Address of Issuer's Principal Executive Offices
6409 Guadalupe Mines Road, San Jose, CA 95120

Item 2.

- (a) Name of Person Filing
Wells Capital Management Incorporated
- (b) Address of Principal Business Office or, if none, Residence
525 Market St, 10th Floor, San Francisco, CA 94105
- (c) Citizenship
California
- (d) Title of Class of Securities
COM
- (e) CUSIP Number
609839105

Item 3. If this statement is filed pursuant to 240.13d-1(b) or 240.13d-2(b) or (c), check whether the person filing is a:

- (a) ☐ Broker or dealer registered under section 15 of the Act (15 U.S.C. 78c)
- (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) ☒ An investment adviser in accordance with 240.13d-1(b)(1)(ii)(E);
]
- (f) ☐ An employee benefit plan or endowment fund in accordance with 240.13d-1(b)(1)(ii)(F);
- (g) ☐ A parent holding company or control person in accordance with 240.13d-1(b)(1)(ii)(G);
- (h) ☐ A savings associations 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) ☐ A non-U.S.institution in accordance with 240.13d-1(b)(1)(ii)(J);
- (k) ☐ Group, in accordance with 240.13d-1(b)(1)(ii)(K).

If filing as a non-U.S.institution in accordance with 240.13d-1(b)(1)(ii)(J), please specify the type of institution: _____

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.

- (a) Amount beneficially owned: 3,637,585
- (b) Percent of class: 10.10%
- (c) Number of shares as to which the person has:
 - (i) Sole power to vote or to direct the vote 536,039
 - (ii) Shared power to vote or to direct the vote 0
 - (iii) Sole power to dispose or to direct the disposition of 3,637,585
 - (iv) Shared power to dispose or to direct the disposition of 0

Person 3

1. (a) Names of Reporting Persons.
Wells Fargo Funds Management, LLC
(b) Tax ID
94-3382001
-

2. Check the Appropriate Box if a Member of a Group (See Instructions)
 - (a) ☐
 - (b) ☐
-

3. SEC Use Only

4. Citizenship or Place of Organization Delaware

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With

5. Sole Voting Power 2,594,149

6. Shared Voting Power 0

7. Sole Dispositive Power 30,779

8. Shared Dispositive Power 0

9. Aggregate Amount Beneficially Owned by Each Reporting Person 2,594,149

10. Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)

11. Percent of Class Represented by Amount in Row (9) 7.20 %

12. Type of Reporting Person (See Instructions)

IA

Item 1.

- (a) Name of Issuer
MONOLITHIC PWR SYS INC
- (b) Address of Issuer's Principal Executive Offices
6409 Guadalupe Mines Road, San Jose, CA 95120

Item 2.

- (a) Name of Person Filing
Wells Fargo Funds Management, LLC
- (b) Address of Principal Business Office or, if none, Residence
525 Market Street, San Francisco, CA 94105
- (c) Citizenship
Delaware
- (d) Title of Class of Securities
COM
- (e) CUSIP Number
609839105

Item 3. If this statement is filed pursuant to 240.13d-1(b) or 240.13d-2(b) or (c), check whether the person filing is a:

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- (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) ☒ An investment adviser in accordance with 240.13d-1(b)(1)(ii)(E);
]
- (f) ☐ An employee benefit plan or endowment fund in accordance with 240.13d-1(b)(1)(ii)(F);
- (g) ☐ A parent holding company or control person in accordance with 240.13d-1(b)(1)(ii)(G);
- (h) ☐ A savings associations 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) ☐ A non-U.S.institution in accordance with 240.13d-1(b)(1)(ii)(J);
- (k) ☐ Group, in accordance with 240.13d-1(b)(1)(ii)(K).

If filing as a non-U.S.institution in accordance with 240.13d-1(b)(1)(ii)(J), please specify the type of institution: _____

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.

- (a) Amount beneficially owned: 2,594,149
- (b) Percent of class: 7.20%
- (c) Number of shares as to which the person has:
 - (i) Sole power to vote or to direct the vote 2,594,149
 - (ii) Shared power to vote or to direct the vote 0
 - (iii) Sole power to dispose or to direct the disposition of 30,779
 - (iv) Shared power to dispose or to direct the disposition of 0

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 or Control Person.

See Exhibit B

Item 8. Identification and Classification of Members of the Group

Not applicable.

Item 9. Notice 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.

June 10, 2010

Date

/s/ Jane E. Washington

Signature

Jane E. Washington, VP Trust Operations

Name/Title

Exhibit A

EXPLANATORY NOTE

This Schedule 13G is filed by Wells Fargo & Company on its own behalf and on behalf of any subsidiaries listed in Exhibit B. Aggregate beneficial ownership reported by Wells Fargo & Company under Item 9 on page 2 is on a consolidated basis and includes any beneficial ownership separately reported herein by a subsidiary.

Exhibit B

The Schedule 13G to which this attachment is appended is filed by Wells Fargo & Company on behalf of the following subsidiaries:

Wells Capital Management Incorporated (1)
Wells Fargo Funds Management, LLC (1)
Wells Fargo Advisors, LLC (2)
Evergreen Investment Management Company, LLC. (1)
Wells Fargo Delaware Trust Company, N.A. (3)
Wells Fargo Advisors Financial Network, LLC. (2)
Calibre Advisory Services, Inc. (1)
Wells Fargo Bank, N.A. (3)

- (1) Classified as a registered investment advisor in accordance with Regulation 13d-1(b)(1)(ii)(E).
(2) Classified as a broker dealer in accordance with Regulation 13d-1(b)(1)(ii)(A).
(3) Classified as a bank in accordance with Regulation 13d-1(b)(1)(ii)(B).

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