

Loomis Paul  
Form 3  
May 11, 2010

**FORM 3 UNITED STATES SECURITIES AND EXCHANGE COMMISSION**  
**Washington, D.C. 20549**

OMB APPROVAL

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**INITIAL STATEMENT OF 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 * |         | 2. Date of Event Requiring Statement | 3. Issuer Name <b>and</b> Ticker or Trading Symbol                         |                                                                        |
| Â Loomis Paul                             |         | (Month/Day/Year)                     | MKS INSTRUMENTS INC [MKSI]                                                 |                                                                        |
| (Last)                                    | (First) | (Middle)                             | 05/03/2010                                                                 |                                                                        |
| C/O 2 TECH DRIVE, SUITE 201               |         |                                      | 4. Relationship of Reporting Person(s) to Issuer                           | 5. If Amendment, Date Original Filed(Month/Day/Year)                   |
| (Street)                                  |         |                                      | (Check all applicable)                                                     |                                                                        |
| ANDOVER,Â MAÂ 01810                       |         |                                      | <input type="checkbox"/> Director <input type="checkbox"/> 10% Owner       | 6. Individual or Joint/Group Filing(Check Applicable Line)             |
| (City)                                    | (State) | (Zip)                                | <input checked="" type="checkbox"/> Officer <input type="checkbox"/> Other | <input checked="" type="checkbox"/> Form filed by One Reporting Person |
|                                           |         |                                      | (give title below) (specify below)                                         | <input type="checkbox"/> Form filed by More than One Reporting Person  |
|                                           |         |                                      | VP & GM, Astex                                                             |                                                                        |

**Table I - Non-Derivative Securities Beneficially Owned**

| 1. Title of Security (Instr. 4) | 2. Amount of Securities Beneficially Owned (Instr. 4) | 3. Ownership Form: Direct (D) or Indirect (I) (Instr. 5) | 4. Nature of Indirect Beneficial Ownership (Instr. 5) |
|---------------------------------|-------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------|
| Common Stock                    | 1,861                                                 | D                                                        | Â                                                     |

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

SEC 1473 (7-02)

**Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB control number.**

**Table II - Derivative Securities Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)**

| 1. Title of Derivative Security (Instr. 4) | 2. Date Exercisable and Expiration Date (Month/Day/Year) | 3. Title and Amount of Securities Underlying Derivative Security (Instr. 4) | 4. Conversion or Exercise Price of Derivative Security | 5. Ownership Form of Derivative Security: Direct (D) | 6. Nature of Indirect Beneficial Ownership (Instr. 5) |
|--------------------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------|-------------------------------------------------------|
|--------------------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------|-------------------------------------------------------|

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|                       | Date Exercisable | Expiration Date |              | Amount or Number of Shares |        | or Indirect (1) (Instr. 5) |   |
|-----------------------|------------------|-----------------|--------------|----------------------------|--------|----------------------------|---|
| Restricted Stock Unit | Â (1)            | Â (1)           | Common Stock | 706                        | \$ (2) | D                          | Â |
| Restricted Stock Unit | Â (3)            | Â (3)           | Common Stock | 16,225                     | \$ (2) | D                          | Â |

## Reporting Owners

| Reporting Owner Name / Address                                  | Relationships |           |                  |       |
|-----------------------------------------------------------------|---------------|-----------|------------------|-------|
|                                                                 | Director      | 10% Owner | Officer          | Other |
| Loomis Paul<br>C/O 2 TECH DRIVE, SUITE 201<br>ANDOVER, MA 01810 | Â             | Â         | Â VP & GM, Astex | Â     |

## Signatures

/s/Renee M.  
Donlan POA

05/11/2010

Signature of Reporting Person

Date

## Explanation of Responses:

- \* If the form is filed by more than one reporting person, see Instruction 5(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) RSUs vest in one year from the August 28, 2009 grant date
- (2) Each restricted stock unit represents the contingent right to receive one share of common stock of MKS Instruments, Inc.
- (3) The RSUs vest 3 years after grant date, broken out by amount and corresponding grant date as follows: 5,000 on April 9, 2010, 4,000 on May 26, 2009, 4,225 on March 28, 2008, 3,000 on July 1, 2007 and 3,000 on March 5, 2007 grant dates.

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.