ARZBAECHER ROBERT C
Form 4
May 14, 2010

FORM 4

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

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 * ARZBAECHER ROBERT C	2. Issuer Name **and** Ticker or Trading Symbol CF Industries Holdings, Inc. [CF]	5. Relationship of Reporting Person(s) to Issuer (Check all applicable)
(Last) (First) (Middle)	3. Date of Earliest Transaction (Month/Day/Year) 05/12/2010	__X__ Director _____ 10% Owner _____ Officer (give title _____ Other (specify below) below)
C/O CF INDUSTRIES HOLDINGS, INC., 4 PARKWAY NORTH, SUITE 400		
(Street)	4. If Amendment, Date Original Filed(Month/Day/Year)	6. Individual or Joint/Group Filing(Check Applicable Line) _X_ Form filed by One Reporting Person ___ Form filed by More than One Reporting Person
DEERFIELD, IL 60015		
(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 Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Common Stock, par value $0.01 per share	05/12/2010		A		1,344	A	$ 0	17,177	D	
Common Stock, par value $0.01 per share	05/12/2010		P		900	A	$ 73.598	18,077	D	
	05/12/2010		P		1,000	A		19,077	D	

Common Stock, par value $0.01 per share		$ 73.3343

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

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 Acquired (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. Price of Derivative Security (Instr. 5)	9. Number of Derivative Securities Beneficially Owned Following Reported Transaction (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares		

Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
ARZBAECHER ROBERT C C/O CF INDUSTRIES HOLDINGS, INC. 4 PARKWAY NORTH, SUITE 400 DEERFIELD, IL 60015	X			

Signatures

/s/ Douglas C. Barnard, by power of attorney	05/14/2010
**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).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *see* Instruction 6 for procedure.

Explanation of Responses: