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**SECURITIES AND EXCHANGE COMMISSION**

WASHINGTON, D.C. 20549

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**FORM 11-K**

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(Mark One)

**ANNUAL REPORT PURSUANT TO SECTION 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2010

OR

**TRANSITION REPORT PURSUANT TO SECTION 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission file number 1-15579

A. Full title of the plan and the address of the plan, if different from that of the issuer named below:

**MSA RETIREMENT SAVINGS PLAN**

B. Name of issuer of the securities held pursuant to the plan and the address of its principal executive office:

**MINE SAFETY APPLIANCES COMPANY**

1000 Cranberry Woods Drive  
Cranberry Township, PA 16066

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MSA RETIREMENT SAVINGS PLAN  
FINANCIAL STATEMENTS AND SUPPLEMENTAL SCHEDULE

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\* Other schedules required by Section 2520.103-10 of the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974 have been omitted because they are not applicable.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Plan Administrator and Participants

MSA Retirement Savings Plan:

We have audited the accompanying statements of net assets available for benefits of the MSA Retirement Savings Plan (the "Plan") as of December 31, 2010 and 2009, and the related statements of changes in net assets available for benefits for the years then ended. These financial statements are the responsibility of the Plan's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the net assets available for benefits of the Plan as of December 31, 2010 and 2009, and the changes in net assets available for benefits for the years then ended in conformity with accounting principles generally accepted in the United States of America.

Our audits were performed for the purpose of forming an opinion on the basic financial statements taken as a whole. The supplemental Schedule H, Line 4(i) - Schedule of Assets (Held at End of Year) as of December 31, 2010 is presented for the purpose of additional analysis and is not a required part of the basic financial statements, but is supplementary information required by the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974. The supplemental schedule is the responsibility of the Plan's management. The supplemental schedule has been subjected to the auditing procedures applied in the audits of the basic financial statements and, in our opinion, is fairly stated in all material respects in relation to the basic financial statements taken as a whole.

/s/ ParenteBeard LLC  
Pittsburgh, Pennsylvania  
June 15, 2011

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MSA RETIREMENT SAVINGS PLAN  
STATEMENTS OF NET ASSETS AVAILABLE FOR BENEFITS  
(Dollars in thousands)

	December 31	
	2010	2009
Investments, at fair value:		
Registered investment companies	\$ 125,796	\$ 107,230
Common collective trust	35,256	36,467
MSA common stock fund	750	553
Net assets available for benefits, at fair value	161,802	144,250
Adjustment from fair value to contract value for fully benefit-responsive investment contracts within the common collective trust	(348)	458
Net assets available for benefits	<u>161,454</u>	<u>144,708</u>

The accompanying notes are an integral part of these financial statements.

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MSA RETIREMENT SAVINGS PLAN  
STATEMENTS OF CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS  
(Dollars in thousands)

	For the year ended December 31	
	2010	2009
Investment income:		
Net appreciation in fair value of investments	\$ 13,442	\$ 19,276
Interest	564	713
Dividends	2,157	1,800
Participants' contributions	7,051	7,008
Employer contributions	2,935	1,609
	<u>26,149</u>	<u>30,406</u>
Distributions to participants	9,337	17,028
Administrative expenses	66	8
	<u>9,403</u>	<u>17,036</u>
Net increase	16,746	13,370
Net assets available for benefits:		
Beginning of year	144,708	131,338
End of year	<u>161,454</u>	<u>144,708</u>

The accompanying notes are an integral part of these financial statements.

MSA RETIREMENT SAVINGS PLAN  
NOTES TO FINANCIAL STATEMENTS  
DECEMBER 31, 2010 AND 2009  
(Dollars in thousands)

Note 1 – Description of Plan

The description of the MSA Retirement Savings Plan (“Plan”) provided below is for general information purposes only. More complete information is included in the applicable Plan document.

The Plan is a defined contribution plan maintained by Mine Safety Appliances Company (“MSA” or the “Company”) for eligible U.S. employees (“Participants”). The Plan provides for automatic enrollment of new Participants at a Participant contribution rate of 3% of the Participant’s pre-tax earnings. Participants may elect to not contribute or change their contribution rate during a 45-day election period. Participants may elect to contribute from 1% to 25% of their pre-tax earnings (highly compensated Participants are limited to 8%). The Plan allows for matching contributions equal to 100% of the first 1% and 50% of the next 6% of a Participant’s eligible pay. Company matching contributions may not exceed 4% of a Participant’s eligible pay. The Plan permits deferral of federal income taxes on Participants’ contributions, as provided for under Section 401(k) of the Internal Revenue Code (“IRC”).

On June 1, 2009, the Plan was amended to suspend Company matching contributions for payroll periods commencing on or after June 7, 2009. Company matching contributions, as described above, were reinstated effective January 1, 2010.

The Plan provides a number of investment options in registered investment companies, a common collective trust, and Company common stock. Participants may direct the investment of their account into any combination of the available investment options.

Participants are vested immediately in their contributions plus actual earnings thereon. Company matching contributions vest after two years of continuous service with the Company. Prior to January 1, 2009, Participants became vested in Company matching contributions after three years of continuous service with the Company. Each Participant’s account is credited with the Participant’s contributions and allocations of (a) the Company’s matching contributions and (b) Plan earnings, and charged with an allocation of administrative expenses. Allocations are based on Participant earnings or account balances, as defined. The benefit to which a Participant is entitled is the benefit that can be provided from the Participant’s vested account. Participants or their beneficiaries are entitled to the current value of their accounts in the Plan upon death or upon termination of their employment with the Company after attainment of the vesting period.

On termination of service due to death, disability, retirement, or other reasons, Participants may elect to receive a distribution of their vested account balance as a single sum or in monthly installments, request a direct rollover of their vested account balance into an eligible retirement plan, or maintain their account balance in the Plan, subject to certain restrictions.

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Participant loans are not permitted by the Plan.

The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974 (“ERISA”).

The Company has the right under the Plan to discontinue its contributions at any time and to terminate the Plan at any time according to the provisions of ERISA. In the event of Plan termination, Participants will become fully vested in their accounts and will receive a lump sum cash payment, or some other method of payment in accordance with the Plan provisions, equal to their vested account balance.

The Plan is administered by a committee appointed by the Board of Directors of the Company. The committee establishes rules of procedure, interprets the provisions of the Plan, and decides all questions of administration.

Fidelity Management Trust Company is the trustee of the Plan. Fidelity Investments Institutional Operations Company, Inc. provides recordkeeping services for the Plan.

### Note 2 – Significant Accounting Policies

*Accounting method* – The financial statements of the Plan are prepared using the accrual method of accounting.

*Investments* – The Plan’s investments are stated at fair value and consist of various registered investment companies, a common collective trust (Fidelity Managed Income Portfolio II) and the MSA common stock fund. See Note 3 for discussion of fair value measurements. As discussed in the following paragraphs, the Plan’s investment in the common collective trust is presented at fair value with an adjustment to contract value. The average yield to maturity and crediting interest rate for the insurance contracts held within the common collective trust was 1.8% and 1.5% at December 31, 2010 and 2009, respectively.

Purchases and sales of investments are recorded on a trade-date basis. Interest income is recorded on the accrual basis. Dividends are recorded on the ex-dividend date. Net appreciation (depreciation) in fair value of investments includes the Plan’s gains and losses on investments bought and sold, as well as held during the year.

An investment contract is generally permitted to be valued at contract value, rather than fair value, to the extent it is fully benefit-responsive because contract value is the amount participants would receive if they were to initiate permitted transactions under the terms of the Plan. Fully benefit-responsive investment contracts held within the common collective trust are included at fair value in the investments of the Plan and are adjusted to contract value in the statements of net assets available for benefits. The statements of changes in net assets available for benefits are prepared on a contract value basis.

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*Use of estimates* – The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and changes therein, and disclosure of contingent assets and liabilities at the date of the financial statements. Actual results could differ from those estimates.

*Distributions to Participants* – Distributions to Participants are recorded when paid. At December 31, 2010 and 2009, there were no significant unpaid benefits allocated to accounts of Participants who had elected to withdraw from the Plan.

*Funding* – The Plan is funded by contributions from Participants and the Company. The cost of administering the Plan is borne by the Plan. Investment management fees paid by each fund are deducted directly from investment income.

*Subsequent events* – The Plan has evaluated subsequent events and has concluded that all events that would require recognition or disclosure are appropriately reflected in these financial statements.

*New accounting standards* – In January 2010, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update No. 2010-06 “Fair Value Measurements and Disclosures: Improving Disclosures about Fair Value Measurements” (“ASU 2010-06”), which provides a greater level of disaggregated information and more robust disclosures about valuation techniques and inputs to fair value measurements, transfers in and out of Levels 1 and 2, and the separate presentation of information in Level 3 reconciliations on a gross basis rather than net. New disclosures and clarifications of existing disclosures are effective for interim and annual reporting periods beginning after December 15, 2009. Level 3 disclosures are effective for fiscal years beginning after December 15, 2010. Adoption of ASU 2010-06 had no material impact on the Plan’s financial statements, but expanded disclosures about certain fair value measurements.

### Note 3 – Fair Value Measurements

The Plan measures on a recurring basis its investments at fair value in accordance with FASB guidance. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value hierarchy distinguishes between (1) market participant assumptions developed based on market data obtained from independent sources (observable inputs) and (2) the reporting entity’s own assumptions about market participant assumptions developed based on the best information available in the circumstances (unobservable inputs). The fair value hierarchy consists of three broad levels, which gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). The three levels of the fair value hierarchy are:

- Level 1 - Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities.

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- Level 2 - Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly, including quoted prices for similar assets or liabilities in active markets; quoted prices for identical or similar assets or liabilities in markets that are not active; inputs other than quoted prices that are observable for the asset or liability (e.g., interest rates); and inputs that are derived principally from or corroborated by observable market data by correlation or other means.
- Level 3 - Inputs that are both significant to the fair value measurement and unobservable.

The asset or liability's fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Valuation techniques used need to maximize the use of observable inputs and minimize the use of unobservable inputs.

The following is a description of the valuation methodologies used for Plan assets measured at fair value. There have been no changes in the methodologies used at December 31, 2010 and 2009.

*Registered investment companies* – These investments are public investment vehicles valued using the Net Asset Value (“NAV”) provided by the administrator of the fund. The NAV is based on the value of the underlying assets owned by the fund, minus its liabilities, and then divided by the number of shares outstanding. The NAV is a quoted price in an active market and is classified within Level 1 of the valuation hierarchy.

*Common collective trust* – This investment is a public investment vehicle valued using the NAV provided by the administrator of the fund. The NAV is based on the value of the underlying assets owned by the fund, minus its liabilities, and then divided by the number of shares outstanding. The fund's investment objective is to seek the preservation of capital and to provide a competitive level of income over time that is consistent with the preservation of capital. To achieve its investment objective, the fund invests in assets (typically fixed-income securities or bond funds) and enters into “wrapper” contracts issued by third-parties and invests in cash equivalents represented by shares in a money market fund. The fund's NAV is classified within Level 2 of the valuation hierarchy because the fund's NAV unit price is quoted on a private market that is not active; however, the share price is based on underlying investments which are primarily based on observable inputs. The Plan's investment in the fund is not subject to any withdrawal restrictions and distributions may be taken at any time. The Plan has no unfunded commitments relating to the fund at December 31, 2010 or 2009.

*MSA common stock fund* – This investment is valued at the closing price of MSA common stock reported on the New York Stock Exchange, plus cash and accrued interest, and is classified within Level 1 of the valuation hierarchy.

The preceding methods may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Although the Plan believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

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The Plan's investments measured at fair value on a recurring basis by fair value hierarchy level were as follows:

	December 31, 2010			
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total Fair Value
<b>Registered investment companies:</b>				
Equity funds	\$ 84,448	\$ —	\$ —	\$ 84,448
Balanced funds	26,780	—	—	26,780
Fixed income funds	14,568	—	—	14,568
Totals	125,796	—	—	125,796
Common collective trust	—	35,256	—	35,256
MSA common stock fund	750	—	—	750
Total investments	<u>126,546</u>	<u>35,256</u>	<u>—</u>	<u>161,802</u>
	December 31, 2009			
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total Fair Value
<b>Registered investment companies:</b>				
Equity funds	\$ 60,673	\$ —	\$ —	\$ 60,673
Balanced funds	33,717	—	—	33,717
Fixed income funds	12,840	—	—	12,840
Totals	107,230	—	—	107,230
Common collective trust	—	36,467	—	36,467
MSA common stock fund	553	—	—	553
Total investments	<u>107,783</u>	<u>36,467</u>	<u>—</u>	<u>144,250</u>

The Plan did not hold any Level 3 investments as of or during the years ended December 31, 2010 or 2009.

### Note 4 – Tax Status of the Plan

The Internal Revenue Service informed the Company by letter dated December 4, 2001, that the Plan, as then designed, was in compliance with the applicable requirements of the IRC, and was, therefore, not subject to tax under income tax law. The Plan has been amended since receiving the determination letter, however, the Plan administrator believes the Plan is designed and is currently operating in compliance with the applicable requirements of the IRC.

Accounting principles generally accepted in the United States of America require Plan management to evaluate tax positions taken by the Plan and recognize a tax liability (or asset) if the organization has taken an uncertain position that more likely than not would not be sustained upon examination by the Internal Revenue Service. The Plan administrator has analyzed the tax positions taken by the Plan, and has concluded that as of December 31, 2010, there are no uncertain positions taken or expected to be taken that would require recognition of a liability (or asset) or disclosure in the financial statements. The Plan is subject to routine

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audits by taxing jurisdictions; however, there are currently no audits for any tax periods in progress. The Plan administrator believes it is no longer subject to income tax examinations for years prior to 2007.

### Note 5 – Related Party Transactions

Certain Plan investments are shares of registered investment companies and a common collective trust managed by Fidelity Management Trust Company. Fidelity Management Trust Company is the trustee of the Plan and, therefore, these transactions are considered to be party-in-interest transactions. Fees paid by the Plan to Fidelity Management Trust Company for administrative services were \$66 and \$8 for the years ended December 31, 2010 and 2009, respectively.

Certain Plan investments are publicly traded common stock of the Company. During 2010, the Plan purchased 5,450 shares of Company stock at an aggregate cost of \$145 and sold 2,200 shares of Company stock for total proceeds of \$59. During 2009, the Plan purchased 390 shares of Company stock at an aggregate cost of \$11 and sold 519 shares of Company stock for total proceeds of \$14. The Plan received \$21 and \$5 in dividends on Company stock during 2010 and 2009, respectively.

The Company performs administrative functions on behalf of the Plan, for which no fees are charged.

### Note 6 – Forfeited Accounts

At December 31, 2010 and 2009, forfeited non-vested accounts totaling \$19 and \$77, respectively, were included in common collective trust investment balances. These accounts are used first to reinstate previously forfeited amounts for Participants who are re-employed by the Company within five years, then to reduce Plan expenses and then to reduce future Company matching contributions. During the years ended December 31, 2010 and 2009, the use of forfeited non-vested accounts reduced Plan expenses by \$66 and \$7, respectively. During the year ended December 31, 2010, forfeited non-vested accounts were also used to reduce Company matching contributions by \$209.

### Note 7 – Risks and Uncertainties

The Plan provides investment options in registered investment companies, a common collective trust, and a Company common stock fund. Investments are exposed to various risks, such as interest rate, market, and credit risks. Due to the level of risk associated with certain investments and the level of uncertainty related to changes in the value of investments, it is at least reasonably possible that changes in the values of investments will occur in the near term and that such changes could materially affect Participants' account balances and the amounts reported in the statements of net assets available for benefits.

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Note 8 – Investments

Individual investments exceeding 5% of net assets available for benefits were as follows:

	Fair Value at December 31	
	2010	2009
Fidelity Managed Income Portfolio II	\$ 35,256	\$ 36,467
Fidelity Contrafund	20,562	17,995
Fidelity U.S. Bond Index Fund	14,366	12,840
T. Rowe Price Dividend Growth Advantage Fund	14,216	*
Fidelity Diversified International Fund	12,377	12,299
Fidelity Growth and Income Fund	*	12,195
Fidelity Magellan Fund	*	7,443

\* Did not meet the 5% threshold.

The Plan's investments appreciated in value, including gains and losses on investments bought and sold during the year, as follows:

	For the year ended December 31	
	2010	2009
Registered investment companies	\$13,313	\$19,190
MSA common stock fund	129	86
	<u>13,442</u>	<u>19,276</u>

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Note 9 – Reconciliation of Financial Statements to Form 5500

The following is a reconciliation of net assets available for benefits per the financial statements to the Form 5500:

	December 31	
	2010	2009
Net assets available for benefits per the financial statements	\$161,454	\$144,708
Adjustment from contract value to fair value for fully benefit- responsive investment contracts	348	(458)
Net assets available for benefits per the Form 5500	<u>161,802</u>	<u>144,250</u>

The following is a reconciliation of the net increase in net assets available for benefits per the financial statements to the Form 5500:

	For the year ended December 31	
	2010	2009
Net increase in net assets available for benefits per the financial statements	\$16,746	\$13,370
Change in adjustment from fair value to contract value for fully benefit-responsive investment contracts	806	1,157
Net increase in net assets available for benefits per Form 5500	<u>17,552</u>	<u>14,527</u>

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MSA Retirement Savings Plan  
 EIN: 25-0668780 Plan number: 002  
 Schedule H, line 4i (Form 5500) - Schedule of Assets (Held at End of Year)  
 As of December 31, 2010  
 (Dollars in thousands)

(a)	(b) Identity of issue, borrower, lessor or similar party	(c) Description of Investment	(d) Cost	(e) Current Value
	Allianz NEJ Small Cap Value AD	Registered Investment Company	**	\$ 6,394
	Artisan Mid Cap Investor	Registered Investment Company	**	5,351
*	Fidelity Contrafund	Registered Investment Company	**	20,562
*	Fidelity Diversified International Fund	Registered Investment Company	**	12,377
*	Fidelity Equity Income Fund	Registered Investment Company	**	4,078
*	Fidelity Freedom K 2000	Registered Investment Company	**	1,066
*	Fidelity Freedom K 2005	Registered Investment Company	**	19
*	Fidelity Freedom K 2010	Registered Investment Company	**	2,762
*	Fidelity Freedom K 2015	Registered Investment Company	**	3,200
*	Fidelity Freedom K 2020	Registered Investment Company	**	5,069
*	Fidelity Freedom K 2025	Registered Investment Company	**	1,752
*	Fidelity Freedom K 2030	Registered Investment Company	**	3,108
*	Fidelity Freedom K 2035	Registered Investment Company	**	854
*	Fidelity Freedom K 2040	Registered Investment Company	**	1,944
*	Fidelity Freedom K 2045	Registered Investment Company	**	549
*	Fidelity Freedom K 2050	Registered Investment Company	**	500
*	Fidelity Freedom K Income	Registered Investment Company	**	462
*	Fidelity Magellan Fund	Registered Investment Company	**	7,605
*	Fidelity Puritan Fund	Registered Investment Company	**	5,495
*	Fidelity Total Bond	Registered Investment Company	**	202
*	Fidelity U.S. Bond Index Fund	Registered Investment Company	**	14,366
	RidgeWorth Mid-Cap Value Equity Fund	Registered Investment Company	**	1,617
	T. Rowe Price Dividend Growth Advantage Fund	Registered Investment Company	**	14,216
	Spartan Extended Market Index Fund	Registered Investment Company	**	4,248
	Spartan 500 Index	Registered Investment Company	**	<u>8,000</u>
	<b>Total Registered Investment Companies</b>			125,796
*	Fidelity Managed Income Portfolio II	Common/Collective Trust	**	35,256
*	MSA Common Stock Fund	Company Common Stock	**	<u>750</u>
	<b>Total</b>			<u><u>161,802</u></u>

\* Denotes a party-in-interest, for which a statutory exemption exists.

\*\* Cost omitted for participant directed investments.

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the Employee Benefits Administrative Committee has duly caused this annual report to be signed on its behalf by the undersigned hereunto duly authorized.

June 15, 2011

MSA RETIREMENT SAVINGS PLAN

By: /s/ Paul R. Uhler  
Paul R. Uhler  
Chairman of the Employee Benefits Administrative Committee

EXHIBIT INDEX

23. Consent of Independent Registered Public Accounting Firm dated June 15, 2011 is filed herein.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement No. 333-121196 of Mine Safety Appliances Company on Form S-8 of our report dated June 15, 2011, appearing in this Annual Report on Form 11-K of the MSA Retirement Savings Plan for the year ended December 31, 2010.

/s/ ParenteBeard LLC  
Pittsburgh, Pennsylvania  
June 15, 2011