UNITED STATES SECURITIES AND EXCHANGE COMMISSION WASHINGTON, DC 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934

Date of report (Date of earliest event reported): August 19, 2010 (August 15, 2010)

Arch Coal, Inc.

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation) 1-13105 (Commission File Number) 43-0921172 (I.R.S. Employer Identification No.)

CityPlace One
One CityPlace Drive, Suite 300
St. Louis, Missouri 63141
(Address, including zip code, of principal executive offices)
Registrant's telephone number, including area code: (314) 994-2700

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- o Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- o Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Item 8.01 Other Events.

On July 21, 2010, the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Act") was enacted. Section 1503 of the Act contains new reporting requirements regarding mine safety, including disclosing on a Current Report on Form 8-K the receipt of an imminent danger order under section 107(a) of the Federal Mine Safety and Health Act of 1977 (the "Mine Act") issued by the federal Mine Safety and Health Administration.

On August 15, 2010, Canyon Fuel Company, LLC, a subsidiary of Arch Coal, Inc., received an imminent danger order under section 107(a) of the Mine Act stating that an operator of a diesel manlift at our Sufco mine operated the manlift without wearing a safety belt/harness with tie off lines. The manlift was immediately stopped and the operator was lowered to the ground without an incident where they put on a safety belt/harness and tied off to the compartment. These actions terminated the order.

Signatures

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

Dated: August 19, 2010 Arch Coal, Inc.

By: /s/ Robert G. Jones

Robert G. Jones Senior Vice President — Law, General Counsel and

Secretary