

An Alternative to Fly Ash Beneficiation – Ozone Treatment Demonstration at PPL Montour SES

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ABSTRACT

The disposal of fly ash from the combustion of coal is becoming increasingly difficult and there is a growing interest in beneficial use alternatives. However, beneficiation is necessary when the fly ash does not meet the required quality specification for the product or market intended.

This project, conducted at PPL's Montour SES, is the first near full-scale (~10 ton/day), demonstration of ash ozonation technology. Bituminous and sub bituminous ashes, including two ash samples that contained activated carbon, were treated during the project. Results from the tests were very promising. The ashes were successfully treated with ozone, yielding concrete-suitable ash quality. Preliminary process cost estimates indicate that capital and operating costs to treat unburned carbon are competitive with other commercial ash beneficiation technologies, often at a fraction of the of lost sales and/or ash disposal costs. A description of the test system, test results, and preliminary costs for the process are summarized in this paper.

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