

The Use of Power Plant Combustion Products in Maryland

Paul A. Petzrick

Maryland Power Plant Research Program, 580 Taylor Avenue, B-3, Annapolis, MD 20723

KEYWORDS: power plants, combustion products, cementitious materials, geotechnical applications, bulk filling, grouting, soil cement, karst topography

ABSTRACT

Maryland power plants produce about 1.5 million tons of combustion products per year. Currently about half of this production is put to constructive use in highway, mine, and construction applications. Five years ago the Maryland Power Plant Research Program initiated a series of demonstration projects to develop beneficial use of all of Maryland's projected annual production of 2 million tons of combustion products per year. The focus of Maryland's program is to demonstrate that a mixture of combustion products or combustion products and high lime content waste products can replace concrete as the cementitious material in most standard geotechnical applications and by improving the economics of such projects make more environmentally beneficial projects feasible. A demonstration of bulk filling a mine has been completed and is providing valuable data on the environmental performance of a mixture of fluid bed combustion products, fly ash, and flue gas desulfurization material used as cementitious material in an acid mine environment. Demonstration projects in seepage grouting, intrusion grouting, and covering a high sulfur mine pavement are underway. Maryland's 450 abandoned coal mines, numerous disposal areas, brown-field sites, and karst topographic belt are being studied to identify opportunities to demonstrate the use of combustion products in paste applications, tremie seals, diaphragm walls, secant drilled shaft walls, slurry trenches, solidification and stabilization of dredge fill, compaction grouting, jet grouting, in-situ deep mixing, and in impemeable caps and other soil cement applications.

