

PULLIAM UNIT-5 AND UNIT-8 COAL FLY ASH: CHARACTERIZATION AND USE OPTIONS

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ABSTRACT

The scope of this project is determination of physical, chemical, mineralogical, and microscopical properties of the Wisconsin Public Service Corporation (WPS) Pulliam Unit-5 and Unit-8 pulverized coal fly ashes. The primary objective of this project is to determine potential applications of these materials. The WPS Pulliam Unit-5 is a coal fired steam generator supplying steam to a condensing steam turbine/generator. The Unit-5 steam generator is a Babcock and Wilcox non-reheat, balanced draft, dry bottom, pulverized fuel boiler with a rating of 460,000 lbs/hr steam flow at conditions of 900 psi and 900° F. The turbine/generator is rated at 62,500 KVA with a nominal nameplate rating of 50 MW. The boiler is fed by two Foster Wheeler ball and tube mills which pulverize the primary fuel, coal. The unit is also fired with natural gas for startup and flame stabilization. The fuel utilized is a Powder River Basin low-sulfur subbituminous coal from the Powder River Coal Company's North Antelope Mine, Wyodak-Anderson Seam in Wyoming. Fly ash is collected with the help of an electrostatic precipitator. The WPS Pulliam Unit-5 achieved commercial operation in September 1949.