

ENVIRONMENTAL & COAL TECHNOLOGY

PROJECT FACTS

UNIVERSITY OF KENTUCKY
CENTER FOR APPLIED ENERGY RESEARCH

Demonstration of a Beneficiation Technology for Texaco Gasifier Slag

PARTICIPANTS

UK Kentucky Center for Applied Energy Research

Charah Environmental, Inc.

TECO, Inc.

SPONSORS

UK Kentucky Center for Applied Energy Research

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TECO, Inc.

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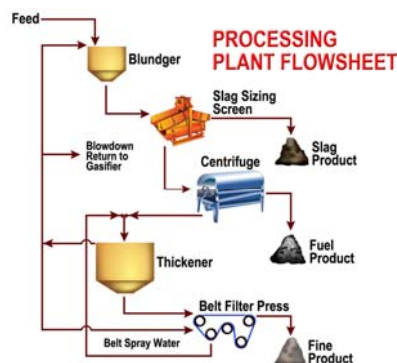
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In an effort to increase utilization of the gasification by-product that had been stored on site at Polk Station, a processing plant was designed by Charah and CAER. The processing plant was constructed during winter 2001-2002, and achieved full production by spring, 2002. Charah was responsible for both construction and operation. The processing plant has a design feed capacity of 100 tph. The operating practice was to blend the 200 tpd current production with a minimum of 600 tpd stockpiled material to eventually utilize all of the stored material, a practice that was successfully implemented to eliminate the 140,000 tons of stockpiled by-product. The stored by-product stockpile was eliminated by spring, 2004.

The processing plant consists of classification circuit that produces three distinct products; +20 mesh frit, -20+100 mesh fuel and -100 mesh fines. During the initial phase of operation, the fuel product was combusted at another of TECO's PC boilers. At the present time, the fuel product is combined with the fines product and recirculated to the gasifier as supplemental fuel, thus reducing fuel consumption, but more importantly, eliminating the need to landfill more than 70% of the by-product generated by the gasifier. Currently, there is no sustained market for the frit product, but research efforts are in progress to develop viable uses for this unique material. Once sustained uses have been established, the by-product utilization rate at Polk Station, which is currently 70%, will increase to 100%, a dramatic improvement from 0% in 2001. This demonstration effort has been successful because of the cooperative efforts of UK-CAER, TECO and Charah Environmental from conception through commercialization.



Polk Station with slag stockpile in foreground.



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