

Coal Sampling Technique

Large industrial plants and utilities burning coal in their boilers must determine ash content, Btu value, moisture and sulfur content. This involves multiple sampling. Here is how Gulf Power's Crist Plant does it.

The Crist Steam Plant of Gulf Power Company north of Pensacola, Florida, burns about 450,000 tons of pulverized coal a year in its two biggest boilers and most of this coal comes from one vendor in Western Kentucky.

Analyzing this coal for ash, Btu, moisture and sulfur content involves multiple sampling from the time the coal arrives by barge until just before it is fed into the pulverizers.

To simplify and lend accuracy to its sampling technique, Gulf Power utilizes an automatic coal crusher and sampler manufactured by Sturtevant Mill Company.

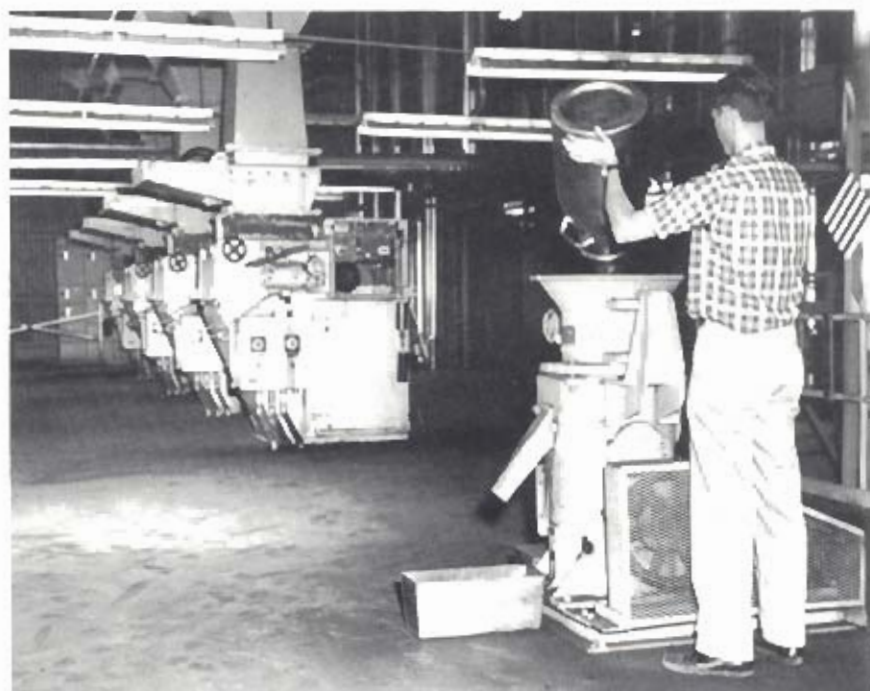
Delivered by barges, the coal is unloaded by a crane unloader and then moved to the stockpile for storage or transported by belt conveyor to the 1900-ton capacity coal bunkers in the Boiler House. A storage stockpile of approximately three months average requirement is maintained to insure coal in event of emergencies.

Some 15 to 20 samples are taken from a barge hauling about 1,400 tons, and one sample is taken every hour from the 500-pound batch automatic scales before pulverization.

"The latter sample tells us the exact condition of the coal before it is pulverized and blown into the boilers," said John B. Howard, plant engineer.

Mr. Howard explained that the Sturtevant coal crusher and sampler is located near the scales so that it is a simple matter for personnel to process each batch.

The coal is fed into the hopper of the Sturtevant crusher-sampler,



Sturtevant's coal crusher and sampler is near a battery of 500-pound batch automatic scales. Samples are taken directly from the scales and fed into the crusher. The sample is passed out of the sample spout.

and is gripped by a revolving coarse crushing nut and roughly crushed against the top crushing liners. Then the coal passes by gravity to the revolving fine-toothed crushing disc and stationary liner where the crushing is finished.

This finely crushed material is uniformly discharged at the periphery of the rotating disc, where, as desired, five, ten, or fifteen per cent of the circumferential discharge is caught and passed by gravity through the independent small "Sample" spout. The balance, or surplus material, is passed by gravity through the larger inclined spout.

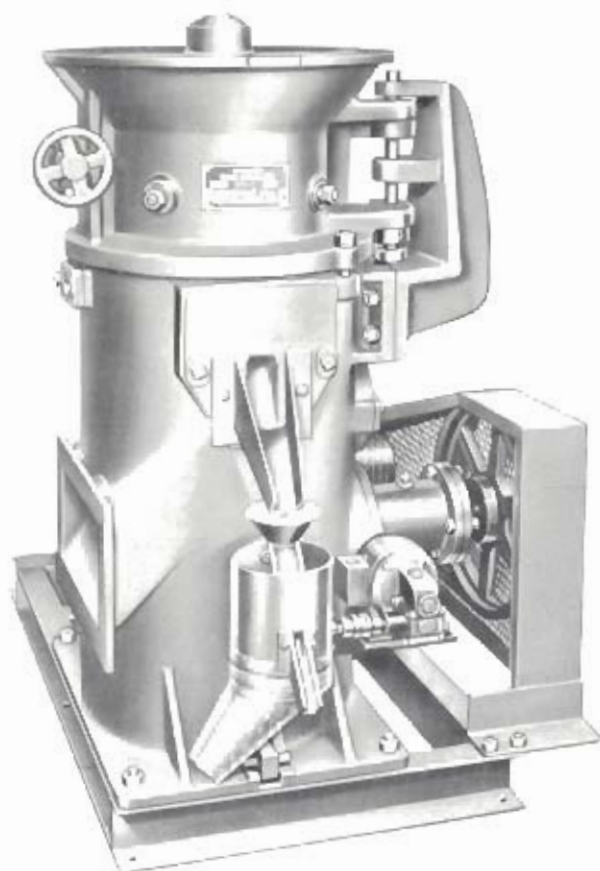
Each day a 500 gram sample is

taken to the laboratory's preparation room where the crushed coal is air-dried and further reduced to minus 60 mesh for determination of heating value.

Laboratory personnel perform standard tests for moisture determination, Btu determination, and a determination of ash content. All readings and computations are recorded on special forms.

"The entire testing operation is conducted according to plan with a minimum of effort and accuracy as a goal. Sturtevant's coal crusher contributes toward the accuracy of the sample and toward the reduction in labor requirements," Mr. Howard said.

**A ROTARY FINE CRUSHER
WITH
AUTOMATIC SAMPLER/SPLITTER**



SPECIFICATIONS	Model & Code	Horse Power	RPM	Capacity Per Hour	Length	Width	Height	Net Weight (Pounds) Machine Only	Gross Wt. (Pounds) Crated
	Sampler Splitter IBIALS1	3	400	@ 6 Mesh 2000 lbs.	36"	24"	45"	1550	1725

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