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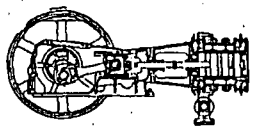
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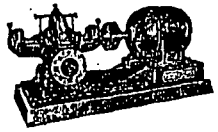


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Begins on page 148

operation and supervision during normal, emergency, and start-up operation. *APC Paper, no number.*

Mill Drying in Pulverizing High Moisture Coals. *By W C Rogers, Riley Stoker Corp.*

Avoiding pulverizer capacity reduction due to high coal moisture depends upon more than supplying enough heat to evaporate the moisture. Other factors, such as degree and duration of raw coal and air mixture to turbulence, and thermo-dynamic evaporative effects on total mixture flow, need consideration. This paper analyzes these factors and their effect upon performance using data obtained in both experimental and field investigations.

High moisture in coal, with pulverized fuel firing, affects preparation equipment more than it does with any other coal burning equipment. In addition to handling extremely wet coal, you suffer from reduced coal crushing capacity and coal conveyor and bunker stoppages. Further complications arise when wet fuel must be passed through raw coal feeders and pulverizing equipment. Ordinarily, high moisture coal periods amount to perhaps 15 days per year in an average installation. Yet with pulverized coal firing you find trouble in handling the coal when its free moisture percentage exceeds 8 or 10%.

Directions for ordering papers on p 150

Perhaps it is the pulverizer itself that suffers most. Since the high moisture in coal occurs only occasionally, the handling and feeding difficulties may be overcome by *judicious use of manpower* and mechanical aids. However, once the wet coal reaches the pulverizer there is little that can be done. But there are two ways to design pulverized coal-fired units to avoid reduction in steaming capacity with high moisture coals: (1) *Provide a sufficient quantity of primary* air at a high enough temperature to dry out at least all of the surface moisture and permit the pulverizer to discharge the pulverized coal and air at a sufficiently high temperature to avoid condensation of moisture or sticking of coal in the discharge lines to burners. (2) Provide excess grinding capacity in the coal pulverizers. The unit can still maintain the desired steaming rate. This second method is rather expensive because the excess capacity works only 5% of the total service time.

Both of these methods are merely palliatives. We believe it is possible to handle satisfactorily high moisture coals within the pulverizer itself by: (1)

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