

PULVERIZING PLANT

The coal is dumped directly from the cars into a concrete-and-steel hopper beneath the track. As a large percentage of the coal is run-of-mine the coal from the hopper is crushed by a 20 x 24-in. spike-toothed roll crusher. From the crusher the coal is elevated by a 20-in. belt conveyor through an inclined tunnel and discharged into the coal plant. At the discharge end of the conveyor the coal is passed through a magnetic separator and discharged into a pair of 28 x 18-in. corrugated rolls. From the rolls the crushed coal is elevated, discharged into a screw conveyor and carried to a 40-ton bin situated at the back end of the dryer. From the bottom of the bin the coal is fed by screw-conveyor to the back end of a 4½ x 30-foot indirect-fired rotary dryer. From the dryer the coal is elevated and discharged into a 45-ton bin situated over the pulverizers. The pulverizing plant consists of two 75-ton pulverizing mills, furnished by the Fuller Company. From the mills the pulverized coal is elevated and conveyed by screw-conveyor to bins in the boiler house. One bin is situated in front of each pair of boilers. The bins have a capacity of 10 tons each and, therefore, provide for a run of 20 hours at full capacity. The bins are rectangular, but have divided hopper-bottoms, thus enabling the coal to be fed by separate feeders to each boiler. Each feeder is chain-and-sprocket driven by a 2-h.p. variable speed motor, the control of which is situated in a convenient position in front of the boilers. The coal is discharged from each feeder, through a 3-inch pipe, into a funnel-shaped opening in the top of the burner nozzle. The burner consists of an outside cylindrical pipe, 14 inches in diameter, one end of which projects into the furnace; a 7-inch blast pipe is inserted in the other end for a distance of from 12 to 18 inches. An adjustable metal cover is fitted over the blast pipe so as to regulate the amount of air induced in the burner. The funnel-shaped opening into which the coal is fed is directly over the discharge end of the blast pipe, so that the coal will be drawn in and thoroughly mixed with the blast and induced air before reaching the combustion chamber of the furnace.

The boilers were installed as shown on plate facing page 43, but, on account of the high ash content (22 per cent) in the coals used, it was found that, with horizontal baffles, there was too much ash accumulation; so a Dutch oven, approximately of 6-feet cube, has since been built in front of the boilers; also, vertical baffles were inserted, replacing the former horizontal ones. With these changes highly gratifying results are obtained; no slag is formed, and the ash is readily blown off the floor of the rear chamber with an air hose once a week.

MISSOURI, KANSAS AND TEXAS RAILWAY

Mr. W. A. Webb, chief operating officer of the power plant of the Missouri, Kansas and Texas railway, at Parsons, Kansas, in reply to enquiries, makes the following statements regarding the use of pulverized fuel: