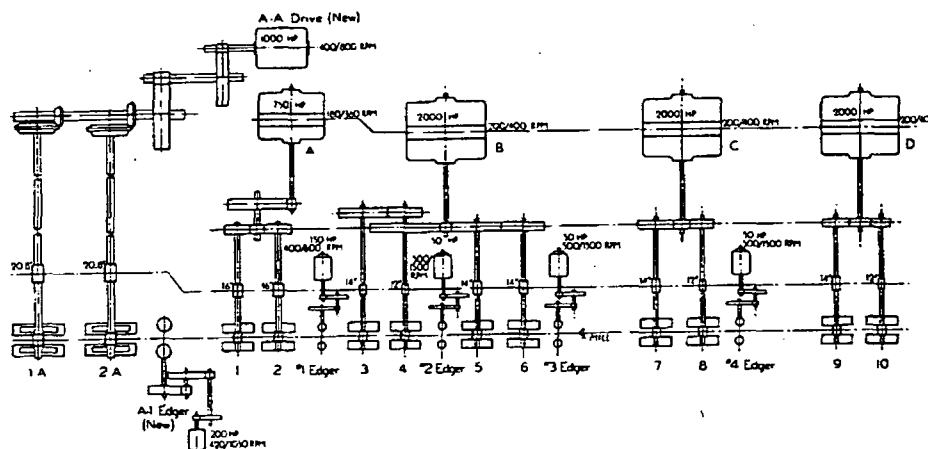


MODERNIZATION OF SKELP MILL AT WHEELING STEEL'S BENWOOD WORKS

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This line drawing shows how the two additional stands, 1A and 2A, were added to the mill.



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compared with normal furnace production using the old slab sizes. In a year this saving would amount to many tons of product that would be worth considerably more per ton as skelp than as crop scrap. In addition there would be a saving in production costs on the pipe mills with some 600 less end welds to make each week and a similar number of pipe lengths which would contain the end welds.

Having established the furnace capacity and the slab sizes, the rolling practice on the mill had to be analyzed.

The old mill was well designed with ten horizontal two-high roll stands and four vertical edging mills. The first two stands of the old mill are driven by a 500-hp d-c motor. The next four horizontal stands are

driven by a 2000-hp d-c motor. On the next four stands, each unit of two stands is driven by a 2000-hp d-c motor. In normal rolling the speed cones on the mill were good and the motor loads well distributed in conformance with the motor ratings.

With the increased slab thickness and added furnace capacity, means had to be provided to reduce the additional slab thickness by means of more roughing stands so that the new slabs entering the original No. 1 stand would have approximately the same thickness as the old slab sizes entering this stand, and also maintain the same width. The solution to this problem was the addition of two roughing stands and one vertical stand. The layout for this new mill is shown in the line drawing above,

wherein the two new roughing stands are shown at the left and designated as 1A and 2A.

Having determined the mill layout, various mill schedules had to be analyzed to find the load distribution on the various main-drive motors and the resultant speeds for the different stands. It was obvious that the top speed of No. 10 stand had to be increased, with corresponding increases in the other stands. The top finishing speed of the mill was increased from 1162 to 1692 fpm and the entering speed on the No. 1A stand was set at 26.1 fpm low speed to 60.8 fpm maximum. This latter, in conjunction with the pass reduction schedule, determined the size of the new motor to drive new 1A and 2A stands, which calculated out