



Weirton Steel Company

October 17

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Weirton, W. Va.

J. A. Pierce

cc: Mr. Walter Eilman, M.H.Detrick Co., Pittsburgh
Mr. James Thomas, M.H.Detrick Co., Pittsburgh

cc: R.A.Buchholz (2)
Chicago Office (2)
L.L.Gill

J.A.Pierce
File

*File in
for file for finding
Plant Ignition File
Weirton Steel*

PERSONNEL INTERVIEWED: Mr. Ludwig, Assistant Supt. Sinter Plant

Following a preliminary inspection with Mr. Buchholz on the 15th, I met Mr. Thomas of the M. H. Detrick Co. at Weirton today to inspect the condition of the refractory lining of the new sinter line ignition hood, the line being down for repairs for the second time since starting operation in June 1958. The primary purpose of the repair at this time was to remove excessive accumulation of build-up which was strongly adhered to the lower parts of the ANCHOR and ANCHOR DASH lining and to repair a hole which had developed in the lining over one of the side burners. It had been noted earlier during operations that some of the castable packing used around burner blocks was running out and these holes were also filled with a competitive super plastic fire brick which was the only type of material used in any of these present repairs. The Koppers erection drawing for this furnace was not explicit as to the type of castable to be used around the burners although there was a verbal understanding that it was to be H-W HIGH ALUMINA CASTABLE. H-W 85 LIGHTWEIGHT CASTABLE was supplied for other parts of the unit and the performance of the material around the burner blocks leaves considerable question as to just what was used in that location. Samples could not be obtained.

Because of the considerable emphasis being placed on sinter lines over the country, the purpose of this visit was to help evaluate refractory performance. The ANCHOR DASH brick in the roof looked excellent and leave nothing to be desired. The same is true for the upper side walls and end walls above the burners. The hole in the one side wall mentioned above was merely due to the loss of two whole brick in some unexplained manner.

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There was some evidence of cutting out in the lower walls in several locations:

1. Below the back wall burners which are angled down. This is an indication of localized overheating due to direct impingement of the combustion cone.
2. Some evidence of concentrated wear in the corners which would seem to be caused by recirculating gases, that is, eddy currents.

It was estimated that approximately 7" of brickwork remained from an original thickness of from 10 to 12" in the areas of greatest wear. A once a year replacement cycle in such spots might logically be estimated. KORUNDAL was recommended both to Mr. Ludwig and to the M. H. Detrick Co. as the best material for upgrading quality.

When we observed the unit operating on the 15th, there was considerable evidence that extensive physical damage had been done to the lower edges of the furnace when it was down at an earlier date for removal of accumulated build-up. Numerous of the large right angle ANCHOR tile had the corners broken off and exhibited other evidences of damage. This was not surprising to us when we watched the removal of the build-up with pickaxes on the 17th. The build-up was quite vitrified and had adhered strongly to the 60% alumina brick although actual penetration was not great. KORUNDAL tile in this area would decrease the adherence but we also suggested that a neutral monolithic material be trowelled or gunned on at the time of each slag removal. This would act as a parting layer and prevent damage to the refractory. We recommended THERMO-LITH for troweling and CHROMEPAK for gunning.

JAP/ds