



Understanding the Business of Coal - Lower CV coals can make more slag

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So the first two articles in the” Understanding the Business of Coal” series were 1) high moisture low heating values coal may be lower cost due to coal geology, 2) pipe velocity and ash particle sizes are important

to slags on the wall and maybe the inlet to the convection pass. This third article will share how they are connected.

When a unit is designed a “Performance Coal” is selected to base the design on. There may be ranges of some specifications included, but the unit guarantee performance is usually based on the performance fuel. If the performance coal is higher calorific value coal, the mills and coal pipe design may be set for this type of coal.

Two things happen if you bring in the lower cost, lower heating value coal. The first is more coal flow to make up for the lost CV. If the mill is tonnage limited you may, and some recommend that you can, open the classifiers and grind the coal less to allow for more tonnage flow. The lower CV low rank coals like to burn so there may not be much carbon in the ash when larger coal sizing is used. The second is that the velocity of the coal pipes goes up due to the higher coal flow and the use of more primary air in the mill to help dry the coal.

You can now see why the higher moisture lower CV coals may increase slag using the “Slat Factor” concept by increasing the coal pipe velocity and increasing the size of rock and ash.