**Title; \_\_\_\_\_\_\_\_Coal Mill Damper Inspection Port\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Contact Person: (Optional) \_\_\_\_\_\_\_\_\_\_\_\_\_\_Bob Jones\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Contact Details: (Optional)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_484-602-1765\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Background/Problem:**

Every time the main ID fan would trip the preheater coal mill dust collector would experience an over temperature event and would burn up bags in the dust collector. This would result in expensive and costly additional downtime as well as present a significant safety hazard.

The hot air supply for drying the coal on the preheater tower coal mill circuit came from the tertiary air duct. The hot air supply line from the tertiary air duct was about 100 feet long and contained a double damper to control the temperature of the gas going into the coal mill. One damper was supposed to open and close to regulate the flow of hot air from the tertiary air duct, while working in conjunction with the other damper that was supposed to bleed cold air into the system.

In the case of a process event such as a main ID fan trip the hot air damper was supposed to close 100 % and the cold air damper open 100% in order to lower the temperature of the coal mill outlet as quickly as possible.

There was some kind of problem with the system because of the high temperature excursions during shutdown.

**Investigation:**

The programming logic was checked as was the linkage and physical operation of the dampers. The damper shafts were turning and not slipping on the shafts. While you could easily see the coal air bleed in damper the hot air damper was located internal to the duct and was impossible to inspect visually. A hole had to be cut in the ductwork to allow an inspection. It was found that the damper was damaged from heat and looked like a potato chip, not a disc. Even though the damper was closed the damaged surface allowed hot air to enter the coal mill and collector and burn up the bags.

**Solution:**

The damper was replaced and there was a permanent inspection port put on the duct so this could be avoided in the future.

Damper

Damper

Damaged Damper

Fresh Air

Coal Mill

Tertiary Air