

Application Summary

# K-Bar 2000 / Adam 155 Application Note

## Coal Fired Power Generation Facility Selects Kurz Instruments, Inc. for Primary Air

A coal fired power plant in Oklahoma that uses CE Ball Mills required better air flow measurement and wanted a way to decrease the chance of Puffs (explosions in the pulverisers or coal pipes).

After reviewing Kurz Instruments, Inc. K-Bar 2000 flow system, the customer decided to run a test on one of his pulverisers in Unit B. A system was purchased and the flow/temperature outputs were run to the DCS system for comparison to the existing measurements (Jam Tubes). After a two month test, the power company decided to upgrade all of Unit A and B Primary air flow meters. This included a total of 10 pulverizers.

Testing of the first unit showed many benefits to better air flow measurement and the system tracked their expectations precisely.

**Application Specifics:**

Each Mill has the following conditions:

- 400,000 Lbs/hr flow rate
- 600F - 700F Primary air temperature (after mixing with tempering air)
- 5' 8" square duct with 5" insulation and 3/8" wall thickness
- Measurement point about 18' downstream on tempering air mixing point.
- Temperature and Flow stratification within the Duct. See charts below

**Customer Benefits from Accurate Primary air flow:**

- Improved LOI
- NOx Reduction
- Improved Fineness Control
- No need for pressure and temperature compensation.
- Puff Prevention

- Better Temperature Control at Pulverizer inlet.
- Repeatable (0.25%) measurement for accurate damper limiting (maintain 3300 SFPM in Coal Pipes).
- Maintain Less than 4 to 1 Air Fuel Ratio to prevent explosions.
- Reduced Maintenance on flow meter system (no Jam tube plugging).

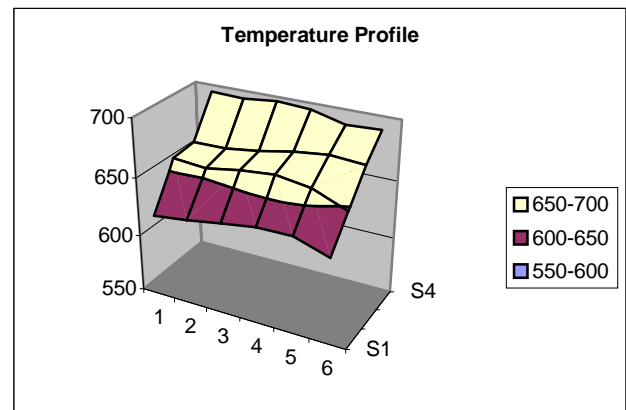


Figure 1 - Temperature Stratification

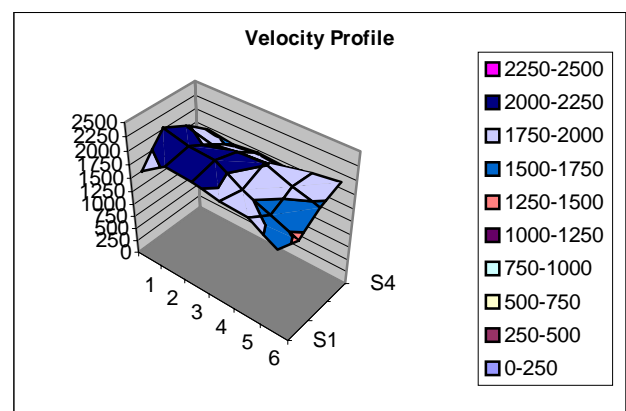


Figure 2 - Flow Stratification

See attached drawing of the installed systems.