



2 – Day Combustion Tune-Up and Performance Engineering Class By Rod Hatt

Outline

Introduction

Coal Combustion
Three T's of Combustion
Coal verse Rock and Pyrite combustion

Combustion Tuning

NOx
Carbon
Slag
Description and Issues

Air Flow

Calculated
Measured

Air to Fuel Ratios

Air Heater Leakage and Issues

Low NOx challenges

Fuel

Pulverizers
Fineness
Abrasion
Rejects
Capacity

PA Flow Importance and Impacts

Mill Testing

- Ports
- Probes and Sampling
- Clean Air
- Dirty Air
- Coal Balance

O₂ Balancing

- Balance Coal
- Gas Gridwork

Boiler Efficiency

- Heat Loss Method and losses
- Combustion Calculations
- Steam Temperatures and Spray Flows

Ash Deposits

Slags

- Pyrite
- Quartz

Splat Factor

Ash Levels

Slag Analyses or post mortem

Fouling

- Sulfates
- Sodium

Ash Viscosity

Water Wall Corrosion

SCR's and Air Heaters

Questions and Answers