



One-Day Coal Combustion Tune-Up and Performance Engineering Class

By Rod Hatt

Outline

Introduction

Coal Combustion
Three Types of Combustion
Coal versus Rock and Pyrite combustion

Combustion Tuning

NO_x
Carbon
Slag
Description and Issues

Air Flow

Calculated
Measured
Air to Fuel Ratios

Air Heater Leakage and Issues

Low NO_x challenges

Fuel

Pulverizers
Fineness
Abrasion
Rejects
Capacity

PA Flow Importance and Impacts

Mill Testing

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

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

SCRs and Air Heaters

Questions and Answers