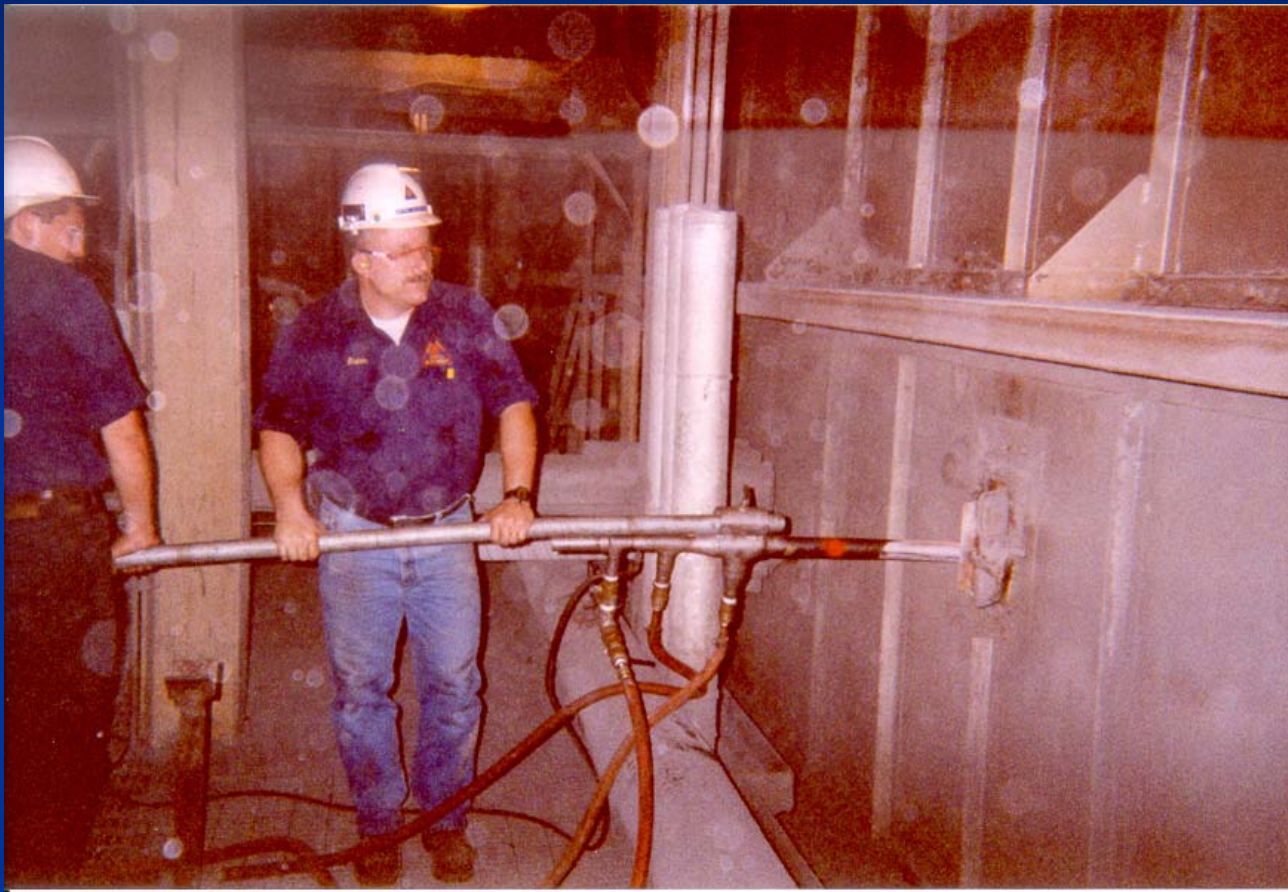


# Thirteen Essentials of Optimum Combustion

1. Furnace exit must be oxidizing preferably, 3%.



# Thirteen Essentials of Optimum Combustion

2. Fuel lines balanced to each burner by “Clean Air” test  $\pm 2\%$  or better.

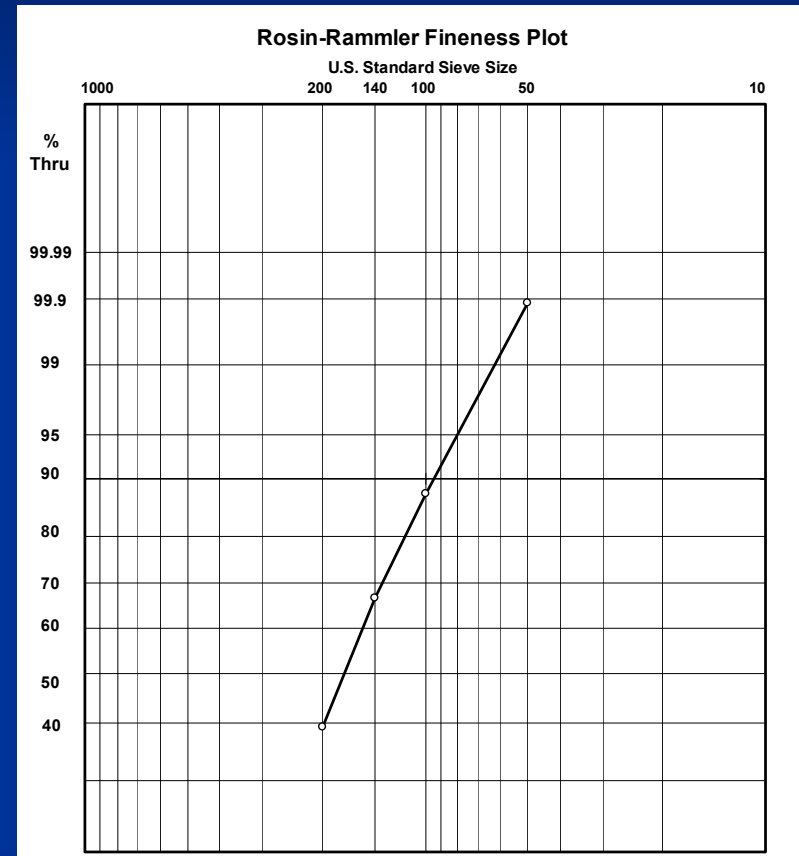
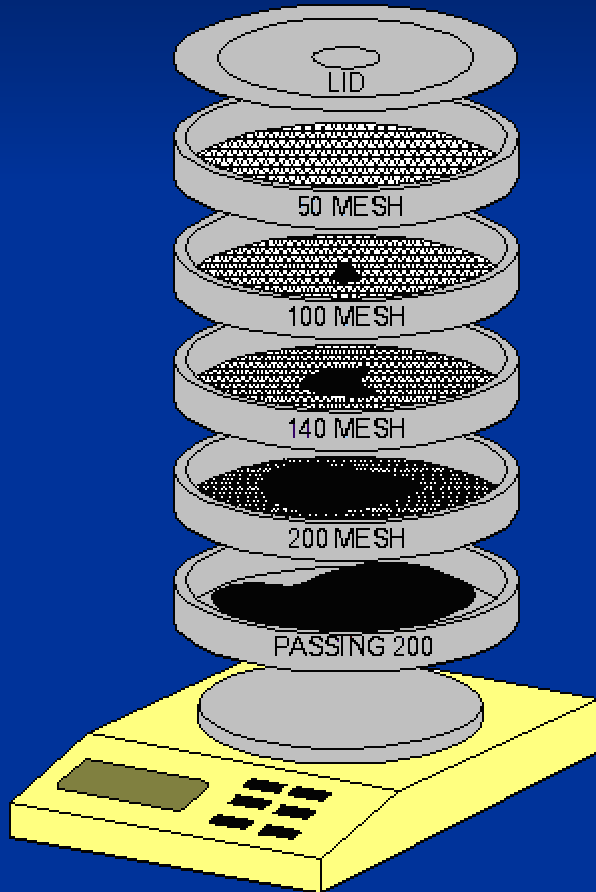
# Thirteen Essentials of Optimum Combustion

3. Fuel lines balanced by “Dirty Air” test, using a Dirty Air Velocity Probe, to  $\pm 5\%$  or better.
4. Fuel lines balanced in fuel flow to  $\pm 10\%$  or better.



# Thirteen Essentials of Optimum Combustion

- Fuel line fineness shall be 75% or more passing a 200 mesh screen. 50 mesh particles shall be less than 0.1%.



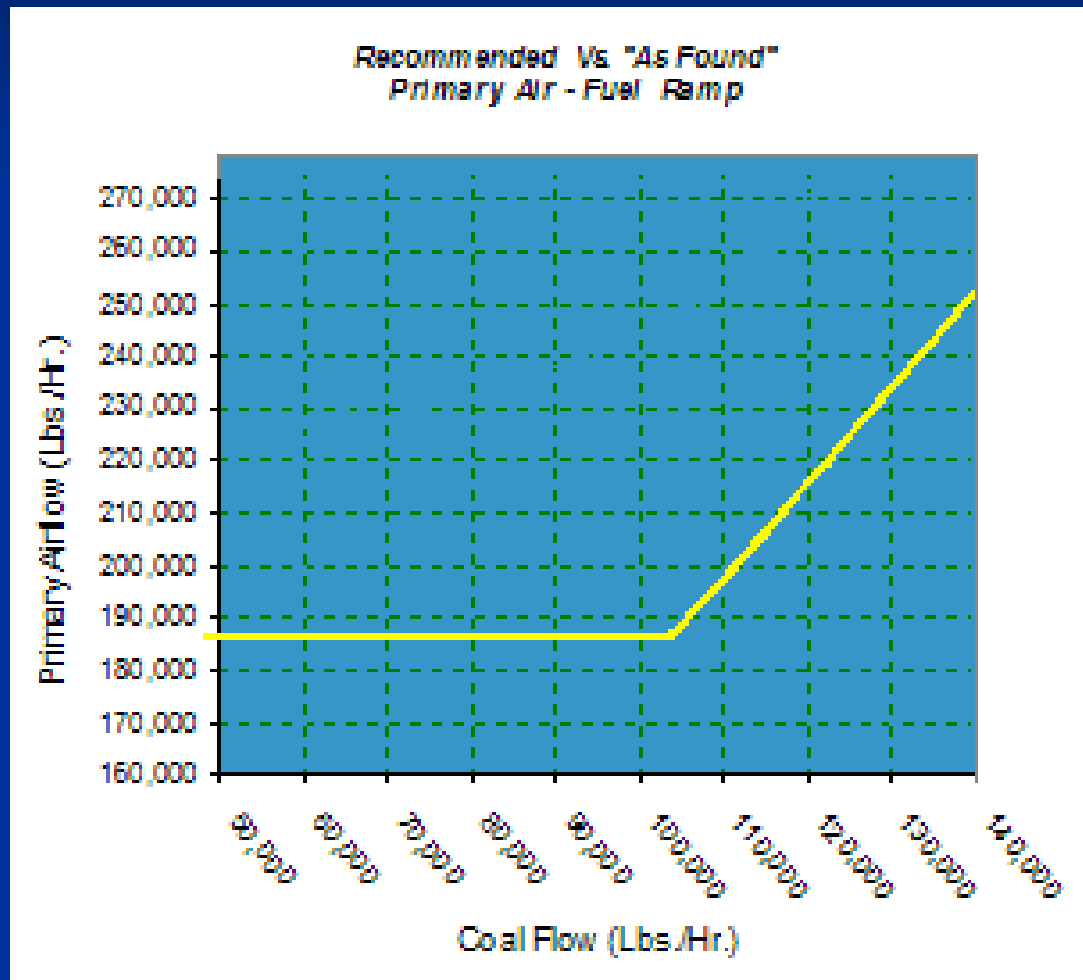
# Thirteen Essentials of Optimum Combustion

6. Primary airflow shall be accurately measured & controlled to  $\pm 3\%$  accuracy.
7. Overfire air shall be accurately measured & controlled to  $\pm 3\%$  accuracy.



# Thirteen Essentials of Optimum Combustion

8. Primary air/fuel ratio shall be accurately controlled when above minimum.
9. Fuel line minimum velocities shall be 3,300 fpm.



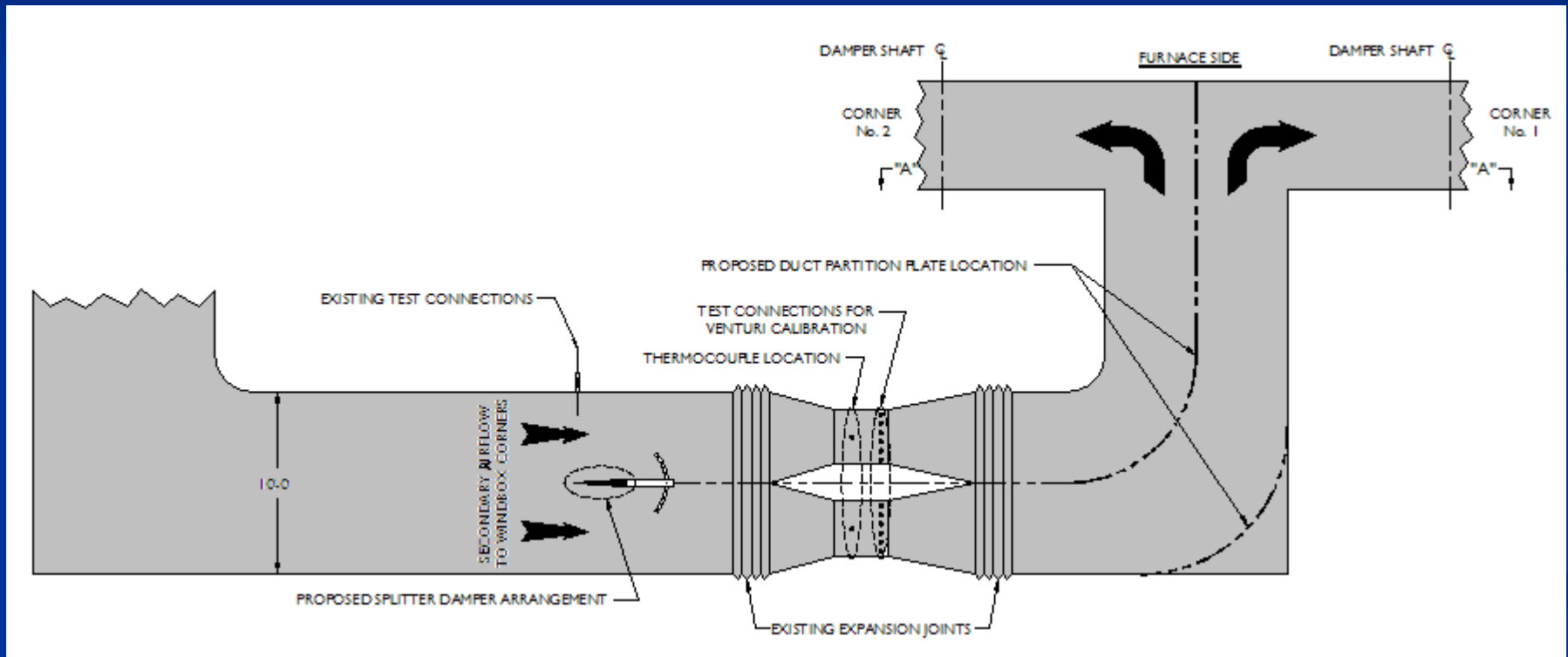
# Thirteen Essentials of Optimum Combustion

10. Mechanical tolerances of burners and dampers shall be  $\pm 1/4$ " or better.



# Thirteen Essentials of Optimum Combustion

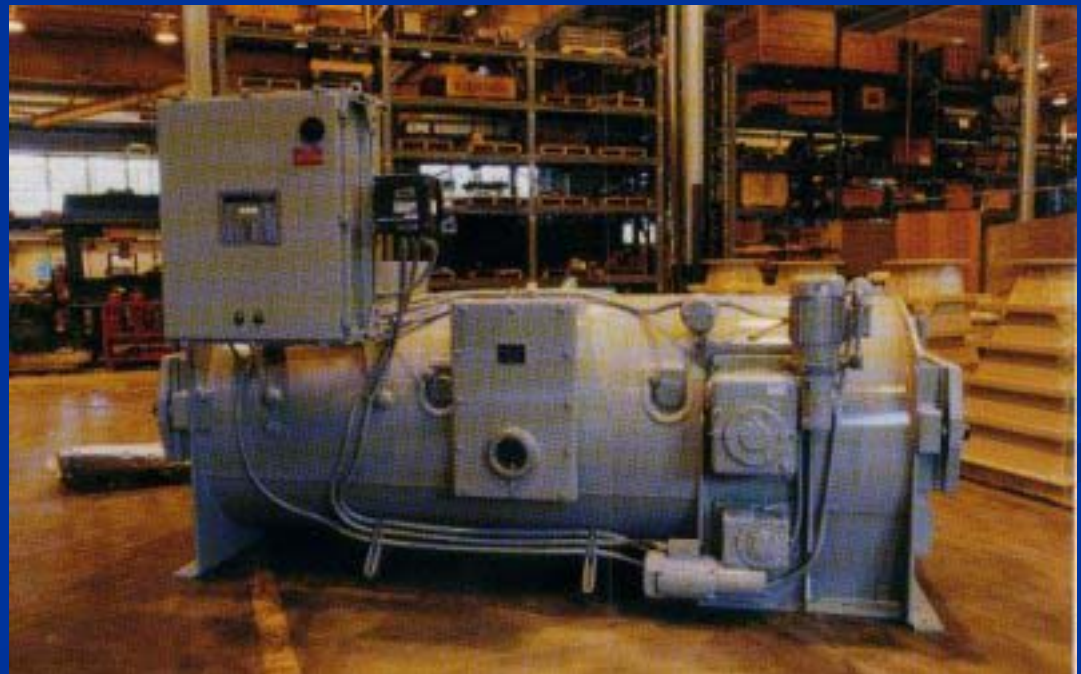
11. Secondary air distribution to burners should be within  $\pm 5\%$  to  $\pm 10\%$ .





# Thirteen Essentials of Optimum Combustion

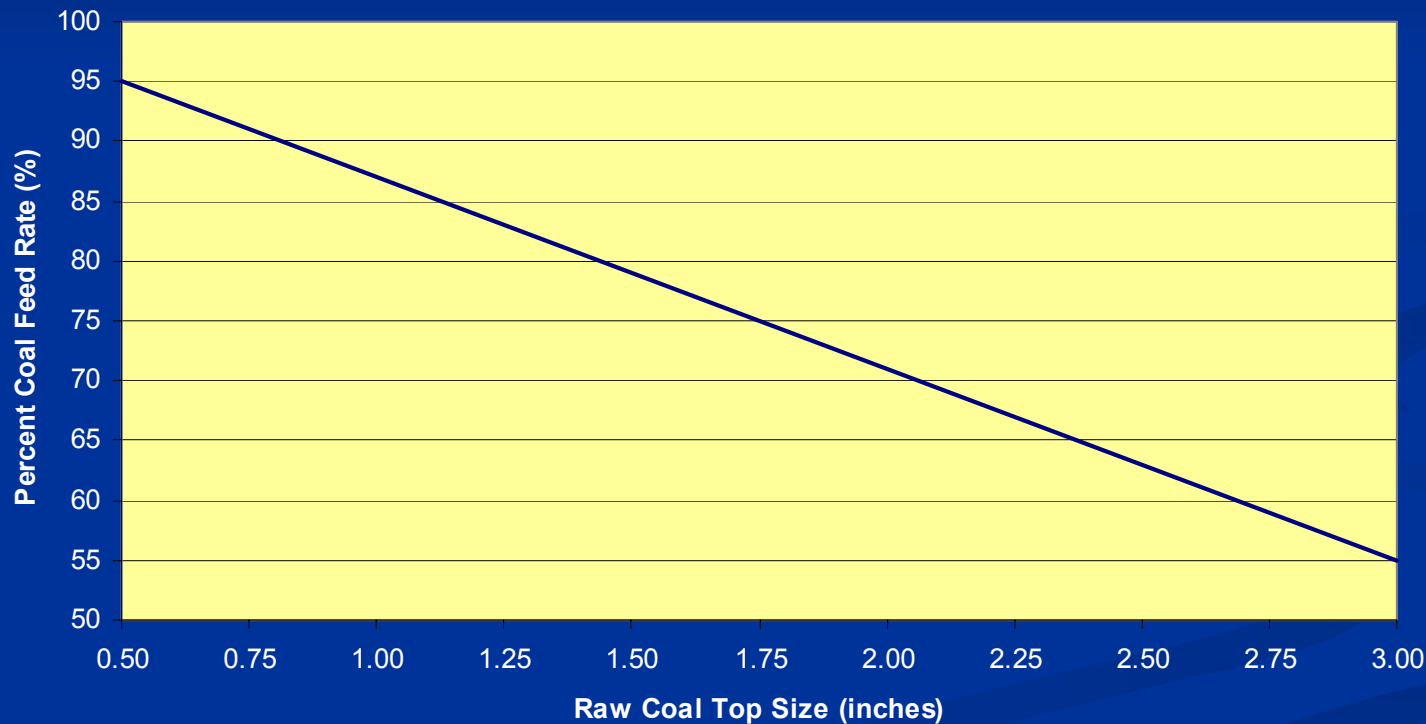
12. Fuel feed to the pulverizers should be smooth during load changes and measured and controlled as accurately as possible. Load cell equipped gravimetric feeders are preferred.



# Thirteen Essentials of Optimum Combustion

- Fuel feed quality and size should be consistent. Consistent raw coal sizing of feed to pulverizers is a good start.

Raw Fuel Size vs. Percent Fuel Feed Rate



This data is based on Actual Recorded conditions of an EL 56; for informational purposes only.  
All data recorded for coal with the same HGI.