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Five Commonly Found Problems

We are still looking for the perfectly tuned boiler!

When I was in mid-career, I learned to avoid using the word "problem." It was much more politically correct to use the term "opportunities for improvement." Well, in this economy and at my current point in my career, I tend to be more blunt than when I was in my twenties as an up and coming senior engineer. For all of you who think that all is well with your pulverized coal fueled boilers and maybe even think they are close to perfect, here are five problems that we find with great frequency. We just thought you would like to know and in case you want to correct them, that is what we do! Give us a call if you suspect you have one of these problems or "opportunities for improvement."

Problem #1: Poor Fuel Fineness

It is almost a given that our field teams expect to find very poor coal fineness. Poor fineness can be described as not only below 70% passing 200 mesh, but also between 55% and 65% passing 200 mesh and 1-3% retained on 50 mesh.

Problem #2: Furnace Reducing Atmosphere

This means there is no free oxygen in the furnace. This contributes to slagging, high carbon in ash, high carbon monoxide levels and opacity issues on boilers equipped with electrostatic precipitators.

Problem #3: I.D. Fan Limitations

This is very common due to high tramp air in-leakage levels which overload the I.D. fan with ambient air that enters the flue gas path, but does nothing to contribute to good combustion.

In This Issue

Upcoming Alliance Seminar:

Inter-Relationships of Combustion, Efficiency, Reliability and Air Pollution Control

Problem #4: High Air Heater Leakage Levels

Ljungstrom regenerative airheaters should be capable of single digit leakage after seal replacements. After an overhaul, about 7-9% is typically achievable.

Problem #5: Boiler Superheater Slagging

This becomes more prevalent as high base load factor operation is needed such as during the peak cold winter months and during the hottest days of the summer. What is the most frequent root cause? From our experience, it is usually a combination of the previous four problems/opportunities aggravated by fuel ash constituents, such as fuel blending which creates a eutectic mix of two types of ashes or with high iron content fuels.

What is the solution? To start with, apply the fundamentals. Precise pulverizer maintenance, airflow measurement and control, correct fuel balances, optimum fuel fineness and sootblowers and water wall de-slaggers in first class condition are all prerequisites. "The Thirteen Essentials" are a good start for getting the furnace inputs optimized.

As regulations change, boiler and utility MACT regulations are implemented, fuel costs or poor quality increases and the spinning reserve of generation capacities diminish during peak load periods, optimization of combustion becomes very important. Burner belt combustion optimization is needed for ever increasing demands on the coal generation fleet. Our job is to help you keep America's lights on while using our national treasure of coal energy.

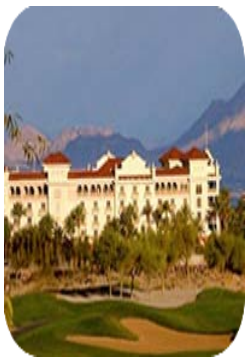
If you would like a consultation by phone or a visit to discuss any of these "problems," please contact our office at 704-983-2040 so we can help provide an "engineered solution."

Let us know if we can help. We take pride in our mantra:

Service - Quality - Results!

Sincerely,

Dick Storm
Storm Technologies, Inc.



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