Risk Management in Coal Combustion

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Risk = Probability x Consequences

Speaking with a power plant engineer the other day, he told me that he read an article that mentioned that *Risk* is equal to the *Probability* of an event happening times the *Consequences*. This idea has intrigued me and I have tried to apply the concept to a modern coal fired utility plant.

The main risks involved in operation of a coal plant involve profit, legal, and safety.

Recent **EPA** toxic pollutant rules and regulations requiring **MACT**, high capital costs, variable coal costs and qualities, and the high cost of derates and outages due to slag and tube leaks represent the *Consequences*.

The key to minimizing profit risk is to reduce the *Probability* of derates and outages while burning low cost coal.

Higher sulfur and higher ash coals cause more slags and tube leaks than lower sulfur and ash coals.

Low NOx combustion process coupled with high load operation causes increased slagging and tube leaks

Slag and tube leaks due to ash correspond to coal quality and the combustion process.

The cost (*Consequences*) of slag and tube leaks is always high: At a minimal derates. The high end includes mutable outages, days in length, with increased maintenance costs.

Restated; to minimize *Risk* (profit, safety, legal) at a coal plant you have to reduce the *Chances* of slag and tube leaks by managing and improving coal quality and combustion.

This is what we do for you at CCI, help you manage your risk!
by improving your understanding of Coal Quality and Combustion
reducing the chances of slag and tube leaks

Risk $ = **Coal Quality & Combustion** **X** **$$$$$$$$ derates & outages**

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