

Methods of Improving Boiler Efficiency

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With the rising cost of fuel prices, industries that use steam boilers for heating or power generation are hard pressed to operate at peak efficiencies.

While steam consumption, leakages, and other heat transmission losses can contribute to the overall energy bill, this article focuses on the heart of the steam generator – the boiler.

Controlling the boiler is of utmost importance in any steam generation energy saving program. Below are some ways to improve boiler efficiencies:

- Reducing excess air
- Installing economizer
- Reducing scale and deposits
- Reducing blow down
- Recovering waste heat from blow down
- Stopping dynamic operation
- Reducing boiler pressure
- Operating at peak efficiency
- Preheating combustion air
- Switching from steam to air atomization
- Switching to lower cost fuel

Reducing Excess Air

By far the most common reason for energy inefficiencies in a boiler can be attributed to the use of excess air during combustion at the burners. When there is more air than is required for combustion, the extra air becomes heated up and is finally discharged out to the atmosphere. However, there are reasons for putting in some extra air for combustion – to compensate for imperfect burner fuel-air mixing conditions, air density changes, control system "slop", burner maintenance, fuel composition and viscosity variation, and imperfect atomizing steam or air controls for burners....

<http://groups.google.com/group/waterforfueld>

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