**Retrofitting of High Pressure Boiler at Layyah Sugar Mills**.

By

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**Abstract:** Boiler retrofitting involves adding new technology, parts, and equipment to boiler system. As with other types of retrofitting, the goal was to increase the overall efficiency of the system and allow it to benefit from newer advancements and design improvements.

Layyah Sugar Mills installed a high pressure boiler in 2014 and put into operation in Season 2014-15. From start the boiler had too high steam outlet temperatures what did restrict the boiler capacity to approx. 90 till 95 tph.

The boiler had to be stopped several times in the first season due to leakages in the membrane wall in the intermediate section between furnace and 2nd pass installed in the top of the boiler.

The stack temperature of the boiler was very high (approx. 245 C). The bagasse consumption was very high in relation to earlier seasons while running with the MP boilers

After studying the problems areas following main modifications are incorporated before the start of season 2015/2016

* Installation of an inter stage de-super heater installed in between the super heaters
* Increment of the heating surface of the 1st super heater
* Lowering the position of bagasse feeders and spreaders
* Improvement of the feeders by installing twin rollers
* Installation of air pulsating dampers to improve the spreading
* Installation of cold air fans for optimizing the spreading of bagasse over the grate
* Installation of over firing system in furnace to improve the combustion efficiency
* Improving the natural circulation system over the intermediate walls
* Installation of additional economizer at boiler outlet.

After retrofitting, wide range of benefits achieved like operation at rated capacity, improvement in combustion efficiency. This paper will cover all modification in detail and performance/results achieved.