

**Corrosion reduction by Feed water Treatment program  
AVT-R to AVT-O at BLCP Coal Fired Power plant.  
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Corrosion failure can directly affect the reliability and efficiency of the power plant. It could cause unplanned maintenance which will create extraordinary expenses from maintenance activities and lost revenue. The major corrosion problem could occur in main equipment including Boiler tubes, Super heaters and reheaters, Turbines, Condensers and Feed water heaters.

There are a number of possible causes of corrosion failure including ineffective control of water chemistry, wrong design or even, improper selection of material.

High quality Boiler water feed and high quality of condensate return will minimize waterside deposit accumulation inside boiler system.

BLCP Power Station has two Subcritical Boiler units and in early Y<sub>2017</sub> water feed treatment program was changed from All Volatile Reducing (AVT-R) to All Volatile Oxidizing (AVT-O)

The change to the Feed water treatment program was made with the expectation that direct and indirect costs associated with operation will be reduced i.e. Start-up time, water consumption, chemical and fuel cost. It's also expected that the revenue from operation will be increased from selling power after the obligation under the power purchase agreement is met so called outside CAH.

In August 2018, after water feed treatment program had been changed from AVT-R to AVT-O, the Chemists' report revealed that all expected results are met i.e. during normal operation, Iron corrosion product in both Boiler units were reduced from 10ppb to less than 5ppb, start-up time was reduced from three hours to one hour due to less suspended result of Iron corrosion product measured. Lastly, HP Feed water Heater flushing was reduced to less than one NTU within one hour at 25% load.

Currently, water quality of Feed water and Boiler water are satisfactorily achieved with EPRI guideline control as 2 of 5 ppb.