

# High Accuracy Boiler Temperature Profiling



## The Customer.

Dong Sheng Thermal Power Plant unit 1 (300MW unit), located in Inner Mongolia China, is a tangentially fired boiler supplied by Shanghai Boiler Works, with 12 oil burners and 20 coal burners.

There are 12 observation ports located on level A, B and DE for operators to view the burner firing conditions inside furnace.

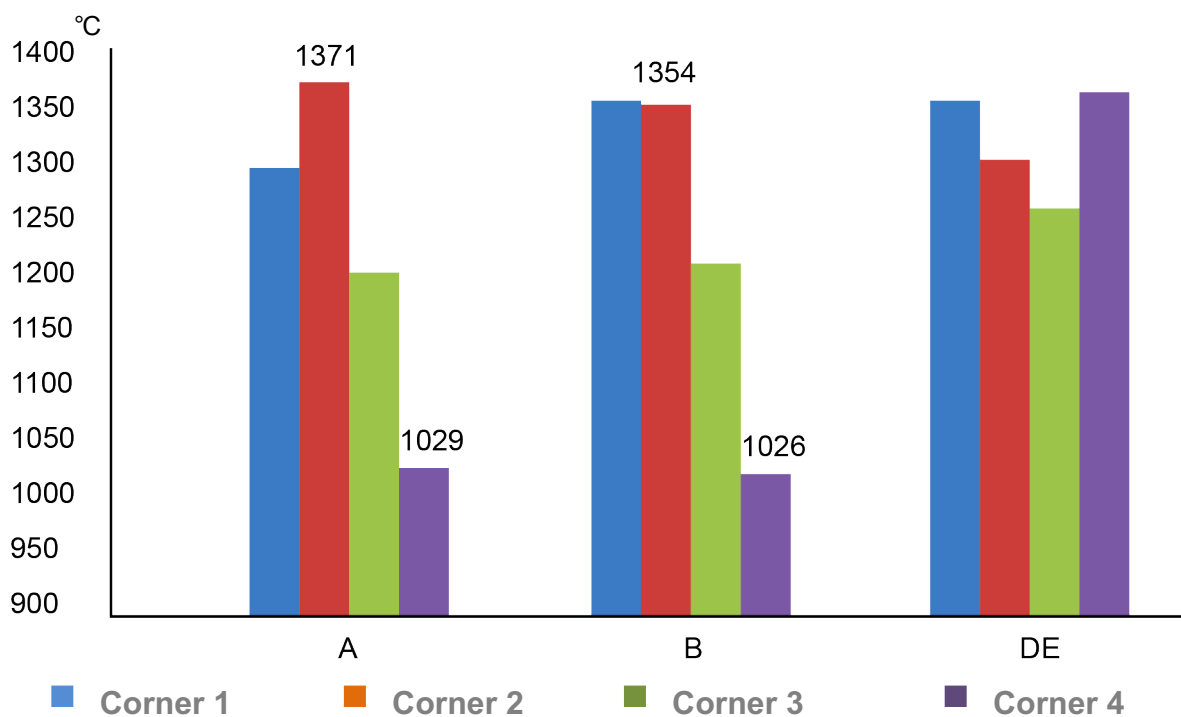
## The Challenge.

Unit 1 has very significant off-center firing problem, which was causing massive slagging and high temperature corrosion on the boiler water wall. Although the plant operators were aware of this critical issue, it was not possible for them to effectively adjust combustion due to insufficient temperature distribution data inside furnace.

# High Accuracy Boiler Temperature Profiling

## The Solution.

On October 14-15, 2015 Safe-Fire engineers team performed temperature testing using TempVision PTMS (portable temperature measurement system) on unit 1 via the 12 observation ports on level A, B and DE. The bar chart below illustrates the temperature distribution on level A, B and DE respectively.



## The Results.

As the results show, there is unevenly distributed temperature profile inside furnace. Temperatures between burners differ greatly, for instance, the temperature difference between burners A2 and A4 is 342°C/647.6°F and between B1 and B4 is 328°C/622.4°F. Using the data generated via PTMS profiling, plant operators can identify the cause of the off-center firing problem and can hence make informed decisions to optimise combustion effectively.