CASE STUDY:
China Market

CHINA MARKET

LOCATION:
Beijing, China

PROBLEM:
Poor air quality during winter season

GOAL:
To promote the Low NOx CMAX and ultra-low NOx UCM burners with FGR due to their stable flame, low NOx op-era-tion, efficient design (low blow-er motor HP), and low O2 (3-4%) operation.

SOLUTION:
Demonstrate our capability to meet current and future NOx requirements with existing Chi-nese boiler designs.

RESULTS:
We commissioned over 120 Power Flame Low and ul-tra-low NOx Burners in China ranging from 125 HP to 1300 HP boilers in both fire tube and "D" type water tube configura-tions.

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China Market Update

Beijing has been experiencing extremely poor air quality during the win-ter for many years due to the burning of fossil fuels as well as the ever growing number of vehicles on the roads.

A measure of air quality is particulate matter in the air 2.5 microns or larger, commonly known as PM2.5. According to the World Health Or-ganization, PM2.5 of less than 50 is considered healthy and above 250 is considered hazardous. In 2013, PM2.5 in Beijing reached over 750. This severe air quality has prompted the Beijing Environmental Protec-tion Bureau (EPB) to put more emphasis to NOx control of its larger boilers used in industry and for district heating. NOx is a precursor to the secondary formation of PM2.5 and ground level smog. The current legislation in Beijing requires all gas-fired boilers to meet 30 PPM NOx emissions and all future installations after July 1, 2017 to meet 15 PPM. The new NOx limits were primarily based upon known technology from the USA.

The European burner manufacturers that had previously dominated the China market did not have sufficient low NOx technology to meet the new emission requirements. This presented an opportunity for Power Flame, a leading Low NOx Burner manufacturer in the US, to demon-strate its capa-bility to meet current and future NOx requirements with existing Chinese boiler designs.

During the past three years, HKL Global has installed and commissioned over 300 Power Flame Low and ultra-low NOx Burners in China ranging from 125 HP to 1300 HP boilers in both fire tube and 80,000 PPH "D" type water tube configurations.

We chose to promote the Low NOx CMAX and ultra-low NOx UCM burn-ers with FGR due to their stable flame, low NOx operation, efficient design (low blower motor HP), and low O2 (3-4%) operation. There is a mandate from the Beijing EPB that the Low NOx solution must provide low emissions and efficient operation at the same time. Power Flame felt that the CMAX and UCM burners with FGR were the best solutions to meet both emission and efficiency requirements. Other premix type burners can meet the emis-sions, but sacrifice efficiency by operating at elevated excess oxygen levels and present a host of operating issues.

Power Flame has successfully demonstrated on all of our installations guar-anteed NOx emissions of 15 and 30 PPM on fire tube boilers and 15 PPM for water tube boilers while operating between 3-4% excess oxygen.