Cleaner air in Shanghai with Coromax®

One Source

CASE: Shanghai Baosteel Group Corporation, China

Using FLSmidth's advanced Coromax® pulse system Baosteel reduces the emission level to below 20 mg/Nm³ which is less than future legislation.

Baosteel is one of the largest steel producers in the world. A main production facility is located in Shanghai with a population of more than 23 million people. Needless to say, regulation of air pollution is getting stricter and the plant seeks to comply with dust emission regulations at 30 mg/Nm^3.

To supply electricity for Baosteel's steel production the plant has four sets of 350 MW coal/blast furnace gas fired power boilers all equipped with ESPs to reduce dust emission.

Objective

Baosteel and the local authorities have decided on a plan to reduce the high level of dust emission. The plan involves several projects and one of them is incorporation of Coromax® pulse systems to the ESPs. FLSmidth has guaranteed an emission level at maximum 20 mg/Nm^3 with this solution.

Defining the project

A study on dust load, moisture content, resistivity and other operating parameters has been carried out to determine the process conditions using pure coal and a mix of blast furnace gas. Due to the relatively high resistivity level the Coromax pulse system is a unique solution to ensure compliance to the required emission level.

The Coromax pulse system is capable of capturing ultra-fine particles by using a unique high frequency pulse technique. Simultaneously, the power consumption will be significantly less compared to traditional DC transformers.

The solution

FLSmidth supplied two additional fields, each with two bus sections, to the existing ESP chambers. All new sections are energized with the Coromax pulse system, including a total of 16 units. FLSmidth has supplied all parts required, including supervision for the installation, commissioning and start-up.

Results

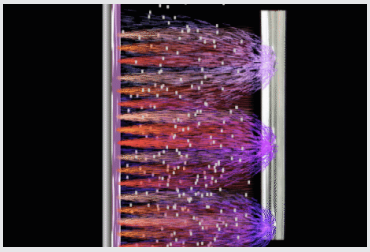
The results obtained have been very successful. Dust emissions have been significantly reduced to 18 mg/Nm^3 which is below the FLSmidth guaranteed figures and future local requirement of 20 mg/Nm^3.

Coromax® pulse system

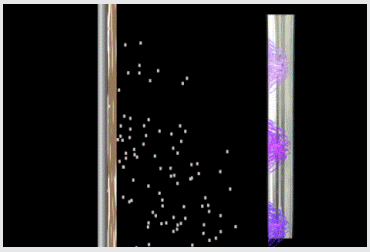
The Coromax pulse system is installed on ESPs as power supply to improve efficiency of a precipitator. Coromax reduces dust outlet emissions by half and cuts power consumption significantly in high resistivity dust applications.

The charging of the dust particles is essential to ensure low emission. Coromax eliminates the occurrence of back corona as the current is efficiently used only for charging the particles.

With Coromax the current and voltage can be controlled independently providing a more uniform current distribution and improving the ESP performance.



Traditional DC energization - occurrence of back corona



Coromax pulse energization - back corona is eliminated

Project Centre Denmark
FLSmidth A/S
Ramsingsvej 30
DK-2500 Valby
Copenhagen
Tel: +45 3618 2000
Fax: +45 3618 2030
E-mail: info@flsairtech.com

Project Centre USA
FLSmidth Inc.
2040 Avenue C
Bethlehem, PA 18017-2188
Tel: +1 610-264-6011
Fax: +1 610-264-6170
E-mail: info-us@flsmidth.com

Project Centre India
FLSmidth Private Limited
FLSmidth House
34, Egatoor, Kelambakkam
(Rajiv Gandhi Salai, Chennai)
Tamil Nadu – 603 103
Tel: +91-44-4748 1000
Fax: +91-44-2747 0301
E-mail: salesairtech-in@flsmidth.com

www.flsmidth.com/apc

M 12-12 200-19-ENG