



Flue Gas Conditioning Technology

FOR REDUCTION OF SUSPENDED PARTICULATE MATTER EMISSION



UNICON Group, one of the leading manufacturer of Air Pollution Control Equipments like Electrostatic Precipitator, Bag filter, Scrubber,...etc and Dense phase material handling system in support of Power, Cement, Sponge Iron, Steel, Sugar, Paper industries and associated facilities and executing turnkey contracts on EPC basis for captive power plants, entered in to a Memorandum of Understanding (MoU) with HWB-Department of Atomic Energy, for transfer of Ammonia Flue Gas Conditioning Technology.

Today the need for the power is increasing and the major source of power is produced in India from burning coal.



While the coal is fired in the boiler, flue gas is generated and lead to the atmosphere with dust particles which are hazardous to our environment including living standards.

The flue gas from coal fired boiler furnace contain suspended fine fly ash particles. The quantum level emission of SPM is required to be controlled as per the statutory requirements set by the Pollution Control Board. The SPM is reduced universally by using Electrostatic Precipitators (ESP) which function by imparting electric charge on the suspended particles by applying high voltage and then collecting them on charged collector plates.



"Green is a word.

**For us Green is not just a word,
it is a passionate commitment"**

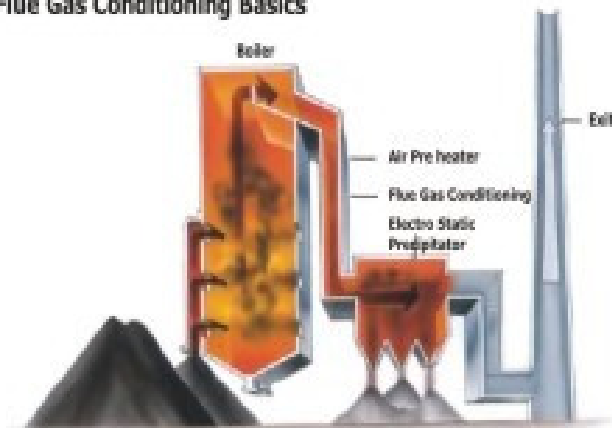
*Heavy Water board
Department of Atomic Energy*

*patent No. 194122(31/BOM/99



The Quality of coal, increased ash content, ash resistivity and many other factors result in the lower performance of ESP and consequent increase in SPM. Many technologies have been tried out for improving the performance of ESP but with limited success.

Flue Gas Conditioning Basics



Result of Technology Demonstration

PARAMETER	Flue Gas before NH ₃ Injection	Flue Gas after NH ₃ Injection
Flue Gas Temperature °C	155	145
Flue Gas Flow, M ³ /S	48.61	48.61
Plant Load, MW	-45	-45
Moisture Content of Coal, % RC	-4	-4
Ash Content of Coal, %	Nil	15
SPM in the flue Gas MG / NM ³	720	70

Actual result of flue gas Conditioning Technology Demonstration



With environmental standards being continuously upgraded for cleaner air quality, time has come for upgrading and developing new technology for overcoming the above problem.

The Technology developed for flue gas conditioning to reduce the SPM emission level is extremely safe and the performance of the system is truly rewarding. The simplicity is that it can be integrated in the existing plants for reduction of SPM with minimum modifications and without down time at low cost. This new technology is a boom to the existing equipments which were installed way back. The technology results in reduction of SPM emission drastically from a level of **600-700 mg / nm³ to 20-70 mg / nm³**

Typical Fly Ash Resistivity

