

FCCU

Technologies and Systems

- *Energy and Electrical Power Generation*
- *Treatment of Flue (Off) Gas to Pristine State to the Environment*



FCCU Technologies and Systems

FCCU - Various Schemes and Integration Systems With or Without Hot Gas Expander

- New low capital Energy Recovery System with steam generation integrated system (new configuration)
- New energy recovery system with two-stage regeneration
- Conventional energy recovery system with two-stage regeneration
- Conventional energy recovery system with single-stage regeneration

Spiral & Hybrid Cycles Technologies

Convert any low, medium or high level heat into:

- Electrical Power
- Refrigeration - any level
- Compressor shaft horse power

Ultimate Flue Gas Scrubbing Technology

FCC Flue (Off) Gas Treatment

- As temperature of Flue Gas is lowered, the SO_x and NO_x are very reactive at these conditions. The atomic Oxygen in the NO_x will also react with both SO_x and Oxides of Nitrogen to produce corresponding acids under the wet conditions.
- Flue Gas is scrubbed with dilute caustic to produce stable salts. For the Flue gas loaded with particulates, the two scrubbers in series are applied: First, venturi scrubber is applied to remove the particulates and Second, a packed bed type is used to remove the pollutants, thus producing the flue gas into pristine state. The pristine flue gas will disperse to atmosphere instantaneously without any visible plume.
- Pollutants such as SO_x and NO_x can also be converted into fertilizers or specialty chemicals.

Caustic Use - The use of caustic will be 2-3% lower due to high scrubbing efficiencies (Low Temperature Absorption) and also caustic solution has the tendency to entrain with non-condensable at high temperature. This phenomena of caustic entrainment is very well know in the Chlor-Alkali (Chlorine-Caustic) Industry.

Plumes - These plumes are known to carry wet acid gases which are very corrosive in nature to the surrounding environments. Our scrubbing technology can compliment or supplement existing or new installations and eliminate the visible plumes.

Advantages:

- Additional Electric Power Generation
- Emissions Credit which may be Significant
- Elimination of Plumes
- Overall Clean and Safe Operation

Imagination is the Limit



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