

Usable Heat Recovery and SO₂ Removal from Pulp Mill



D.R. TECHNOLOGY, INC of Freehold, New Jersey has designed and supplied a high efficiency WET HEAT RECOVERY/ SULFUR DIOXIDE reduction replacement column at a large pulp mill in the Southeastern United States. The design treats the flue gas emanating from the facility's recovery boiler. The column treats over 200,000 Cubic Feet per Minute of hot wet flue gas containing over 16,000 lb/h of SO₂. The column is 22 ft in diameter and more than 100 ft tall. The two stage unit recovers almost 100 million BTU/hr of usable heat and removes 99+% of the SO₂.

The lower section of the column treats quenched flue gas from an existing quencher and extracts heat into circulating cooling water so that the heat picked up is delivered via heat exchange to a number of locations that would require external heating otherwise. The entering wet gas is cooled and water condenses from it. The lower section also captures solid ash material coming from the boiler and removes it with the condensate created so solids level do not overload.

The upper section of the column uses valve style high alloy trays to bring the scrubbing solution into full contact with the gas containing the Sulfur Dioxide. Because the contact trays are so efficient, the replacement column diameter is actually smaller than the one replaced for the same gas flow.

A very high efficiency baffle style "chevron" mist eliminator is used above the heat recovery section and below the SO₂ section. This design supplied by COASTAL TECHNOLOGIES, INC of Varnville, South Carolina (CTI) has performed over a wide range of gas flows, preventing cooling slurry droplets from entering the tray section.

This type of Sulfur Dioxide removal absorber creates a fine aerosol particulate which can create a nuisance smoke if released with the scrubbed gas. The client utilizes high efficiency finely woven tubular screens to capture these solids, eliminating the smoke.

D.R. TECHNOLOGY, INC, in business since 1979, supplies most types of SCRUBBER technologies for solid, mist and nuisance vapor control. Heat recovery units also are supplied to capture wasted energy from hot wet gasses. D.R. TECHNOLOGY can be contacted at www.drtechnologyinc.com.

CTI supplies mist separation technology and equipment for evaporators, NCG service, Recovery Boiler Scrubbers, bleach plant and lime kiln scrubbers, as well as paper machine, dust and pulper scrubbers. CTI is also active in the Chemical, Pharma, food-related evaporation and crystallizer applications, the primary metals industry, geothermal steam separation and scrubbing, and marine-based SOX. CTI can be contacted at www.cti-sc.com.

Best regards,

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