DUAL LOOP WET FLUE GAS DESULFURIZATION SYSTEMS

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Babcock Power Environmental Inc., a Babcock Power Inc.® company, provides fully integrated environmental solutions for utility power plants, waste-to-energy facilities, and large industrial applications. Babcock Power Environmental, and its sister company Riley Power Inc., are market leaders in the field of environmental air pollution control technology, including providing flue gas desulfurization systems to the power generation industry for more than 40 years.

For our customers whose applications require high efficiency SO_2 removal while still effectively managing power consumption, Babcock Power Environmental offers its Dual Loop technology as an alternative solution. The Dual Loop System can maximize SO_2 absorbtion and reagent utilization at a high pH, while oxidation and gypsum production are maximized at a low pH. The separation of loops allows lower liquid-to-gas ratios to achieve the same removal efficiency.

With proven performance of greater than 99% SO_2 removal and low power requirements, our Dual Loop Wet Flue Gas Desulfurization Systems are highly effective and efficient.

Contact Babcock Power Environmental to enhance your system today.

BENEFITS

Dual Loops

- Reduced overall power consumption vs. a single loop system with the same removal efficiency
- Separation of loops allows lower liquid-to-gas ratios to achieve the same removal efficiency
- Allows for reduced tank and liquid heights in absorber and absorber feed tank resulting in smaller equipment (recycle pumps, bleed pumps, oxygen air blowers, etc.)
- Upper loop (Absorber Loop) operates with pH between 5.8 and 6.4 which is ideal for SO_2 absorption and optimization of reagent utilization
- Lower loop (Quencher Loop) operates with a pH between 4.0 and 4.5 which is ideal for oxidation and gypsum production
  - Limits corrosive elements in the absorber loop
  - Materials of construction can be of lower grade with reduced corrosion potential

Flexible Use of Reagents

- Can utilize either limestone or lime or both in the same vessel to achieve greater than 99% SO_2 removal and low power requirements
- When using limestone, can achieve the same removal as a single loop system with larger grind size

Industry Leading Removal Efficiency

- Proven performance of greater than 99%

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DUAL LOOP HISTORY

The original dual loop FGD technology was developed and patented in the U.S. in the late 1970's. The technology focused on resolving the quintessential single loop FGD paradox; SO_2 absorption and reagent utilization are maximized at a high pH while oxidation and gypsum production are maximized at a low pH. The result was a FGD system that achieved higher SO_2 removals than were available at the time. This is still true today.

In the late 1980's, the dual loop technology was transferred to Germany where a significant number of design enhancements were made. The high cost of power in Europe made the dual loop FGD the ideal choice for high removal efficiency applications due to its reduced operating costs when compared to a similar single loop system. The multiple European installations of the dual loop FGD design were for units of greater than 400 MW and with inlet SO_2 concentrations greater than 3,500 ppm.

DUAL LOOP MILESTONES	
1978	First U.S. installation
1985	First German installation
1990	First installation without a Flue Gas Bypass
2000	Collection bowl and headers redesigned based on CFD modeling results

SAFETY³ PEOPLE. POWER. PROJECTS.
We're giving safety the third degree.
Babcock Power Inc. and its subsidiaries place the safety, health and security of our people at the core of our company values. Our team is our most valuable resource, generating solutions everyday to deliver safe, clean, reliable energy globally. With a keen focus on safety, Babcock Power Inc. conducts business in a manner that protects our people, our customers and the environment. From innovation to generation, we are proud of our award-winning safety record and are committed to operating with integrity and excellence.

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